

OVERSIGHT OF POSITIVE TRAIN CONTROL IMPLEMENTATION IN THE UNITED STATES

(115–35)

HEARING

BEFORE THE

SUBCOMMITTEE ON RAILROADS, PIPELINES,
AND HAZARDOUS MATERIALS

OF THE

COMMITTEE ON
TRANSPORTATION AND
INFRASTRUCTURE
HOUSE OF REPRESENTATIVES

ONE HUNDRED FIFTEENTH CONGRESS

SECOND SESSION

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BILL SHUSTER, Pennsylvania (<i>Ex Officio</i>)	

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**Committee on Transportation and Infrastructure
U.S. House of Representatives
Washington DC 20515**

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Mathew M. Sturges
Staff Director

Peter A. DeFazio
Ranking Member
Katherine W. Dedrick
Democratic Staff Director

February 14, 2018

SUMMARY OF SUBJECT MATTER

TO: Members, Subcommittee on Railroads, Pipelines, and Hazardous Materials
FROM: Majority Staff, Subcommittee on Railroads, Pipelines, and Hazardous Materials
RE: Subcommittee Hearing on “The State of Positive Train Control Implementation in the United States”

PURPOSE

The Subcommittee on Railroads, Pipelines, and Hazardous Materials will meet on Thursday, February 15, 2018 at 9:30 a.m. in 2167 Rayburn House Office Building to receive testimony on the status of implementing positive train control (PTC) on the freight and passenger rail network by the December 31, 2018, deadline.

BACKGROUND

Elements of Positive Train Control

PTC describes technologies designed to automatically stop or slow a train before certain accidents occur — specifically, train-to-train collisions, derailments caused by excessive speed, unauthorized incursions by trains onto sections of track where maintenance activities are taking place, and movement of a train through a track switch left in the wrong position. A fully functional PTC system must be able to precisely determine the location and speed of trains; warn train operators of potential problems; and take action if the operator does not respond to a warning. For example, if a train operator fails to stop a train at a stop signal, then the PTC system would apply the brakes automatically.

There are two primary types of systems—overlay and standalone—that functionally meet the PTC requirements. An overlay system allows railroads to install PTC components over existing rail infrastructure and operate the train in accordance with the existing signals and operations in the event of a PTC system failure. A standalone system may be used for new locations, as a replacement for an existing signal or train control system, or to enhance the capabilities of the current method of operation.

There are more than 20 major PTC components that are currently in various stages of development. In order to implement PTC that meets federal requirements, railroads need to integrate and install those components across the rail network. The Association of American Railroads (AAR) has reported that freight railroads will spend a total of \$10.6 billion and additional hundreds of millions each year to maintain PTC systems.¹ The cost of PTC for passenger rail is estimated at \$3.5 billion.² Railroads have made progress on PTC implementation, yet significant challenges still remain.

Legislative History

The Rail Safety Improvement Act of 2008 (RSIA, P. L. 110-432), Division A, included a requirement that certain freight, commuter, and passenger rail lines install PTC by December 31, 2015. The PTC mandate followed a September 12, 2008, accident in California, where a Metrolink commuter train collided head-on with a freight train in the Chatsworth district of Los Angeles. The scene of the accident was a curved section of single track on the Metrolink Ventura County Line just east of Stoney Point. According to the National Transportation Safety Board (NTSB), which investigated the cause of the collision, the Metrolink train ran through a red signal due to the engineer being distracted by text messages. After running the red signal, the commuter train entered a section of single track where the opposing freight train had been given the right of way by the train dispatcher. In the resulting collision, the Metrolink locomotive telescoped into the passenger compartment of the first passenger car and caught fire. All three locomotives, the leading Metrolink passenger car, and seven freight cars were derailed and both lead locomotives and the passenger car fell over. Tragically, there were 25 fatalities and 135 other individuals were injured.

Section 104 of RSIA amended title 49 of the United States Code to add a new Section 20157, implementation of positive train control systems. This section mandated that Class I railroad carriers and intercity passenger rail and commuter rail entities must implement PTC systems by December 31, 2015, on: (1) lines over which intercity passenger rail or commuter rail are operated; (2) main freight lines over which poison- or toxic-by-inhalation hazardous materials (TIH/PIH) are transported; and (3) such other tracks as the Secretary may prescribe by regulation or order.

As early as August 2012, the Federal Railroad Administration (FRA) reported that, “most railroads will likely not be able to complete full RSIA-required implementation of PTC by December 31, 2015.”³ FRA cited the major implementation obstacles as spectrum and radio availability, design specification availability, interoperability standards, back office server and dispatch system availability, track database verification, and installation engineering, including the limited resources that were available to railroads.⁴ In 2013, GAO reported that, “most railroads report

¹ *Positive Train Control*, ASSOC. OF AMERICAN RAILROADS (March 2017), <https://www.aar.org/BackgroundPapers/Positive%20Train%20Control.pdf>.

² *Id.*

³ *Positive Train Control Implementation Status, Issues, and Impacts*, Fed. Railroad Admin., <https://www.fra.dot.gov/Elitb/Document/2318>.

⁴ *Id.*

they will not complete PTC implementation by the 2015 deadline due to a number of complex and interrelated challenges,” and that “Congress should consider granting FRA the authority to extend the deadline.”⁵ Similar to the 2012 report, the GAO report outlined implementation challenges, citing the fact there are limited suppliers of the technology available to railroads and that many of the PTC components had not been developed before RSIA was enacted.⁶ Additionally, GAO cited developing system components and PTC installation, system integration and field testing, and FRA resources as major challenges.⁷

In 2015, GAO and FRA again recommended the deadline be extended.⁸ According to the GAO report, the biggest challenges to PTC implementation were integration and field testing of PTC components, as well as FRA field testing, certification, and approval of systems and safety plans, including FRA’s available resources and timeliness.⁹ Additionally, GAO cited issues with development of a major component of the Interoperable Electronic Train Management System had been continually delayed and was one of the major obstacles to meeting the 2015 deadline.¹⁰ In FRA’s 2015 report, they also reported that there were a limited number of suppliers of PTC technology and issues remained with spectrum and radio interference.¹¹ Similarly, AAR and the American Public Transportation Association (APTA) reported that most railroads would not have had PTC fully implemented by the 2015 deadline.¹²

At the time, the potential impacts of a missed deadline were significant. In letters to Congress, freight railroads indicated that they would have to suspend shipments of TIH/PIH chemicals, and those shipments would have to have ceased well before the December 31, 2015 deadline. TIH/PIH chemicals are critical for the economy. For example, chlorine is used to purify drinking water and for manufacturing, while anhydrous ammonia is used by farmers for fertilizer. Some railroads would have had to suspend shipments of all commodities on lines

⁵ *POSITIVE TRAIN CONTROL Additional Authorities Could Benefit Implementation*, GOV’T ACCOUNTABILITY OFFICE, <https://www.gao.gov/assets/660/656975.pdf>.

⁶ *Id.*

⁷ *Id.*

⁸ *POSITIVE TRAIN CONTROL Additional Oversight Needed As Most Railroads Do Not Expect to Meet 2015 Implementation Deadline*, GOV’T ACCOUNTABILITY OFFICE, <https://www.gao.gov/assets/680/672320.pdf> (“In our 2013 report on PTC implementation, we suggested that Congress consider providing FRA with additional authority to extend the deadline on individual rail lines—when the need to do so can be demonstrated by the railroad and verified by FRA—on a case-by-case basis”); *Status of Positive Train Control Implementation*, FED. RAILROAD ADMIN, <https://www.fra.dot.gov/eLib/details/L16962>.

⁹ *POSITIVE TRAIN CONTROL Additional Oversight Needed As Most Railroads Do Not Expect to Meet 2015 Implementation Deadline*, GOV’T ACCOUNTABILITY OFFICE, <https://www.gao.gov/assets/680/672320.pdf>.

¹⁰ *Id.*

¹¹ *Status of Positive Train Control Implementation*, Fed. Railroad Admin, <https://www.fra.dot.gov/eLib/details/L16962>.

¹² Assoc. Am. RRs, PTC Implementation: The Railroad Industry Cannot Install PTC on the Entire Nationwide Network by the 2015 Deadline 13 (Apr. 2015); *Positive Train Control: An Assessment of PTC Implementation by Commuter Railroads*, APTA, https://www.apta.com/gap/legissues/passengerrail/Documents/APTA%20PTC%20Implementation%20progress%20report_FINAL.pdf (APTA policy supports providing the Department of Transportation with the authority to provide extensions on a case by case basis).

requiring PTC, effectively shutting down the network.¹³ Rail service disruptions lasting only one month were estimated by one report to give rise to a 2.6 percentage point hit to the United States' real GDP.¹⁴ That same report noted that a shutdown would put nearly 700,000 jobs at risk.¹⁵

Similarly, in the event of a missed deadline, commuter railroads would have had to cease operations after December 31, 2015, significantly impacting commutes in major metropolitan areas (560 million trips per year).¹⁶ Additionally, Amtrak service would have been suspended. Not extending the PTC deadline would have forced more commuters onto busy roads, and stopped or diverted some TIH shipments to other modes.

In response, Congress passed the bipartisan *Surface Transportation Extension Act of 2015* (P.L. 114-73). Section 1302 was the Positive Train Control Enforcement and Implementation Act of 2015, which extended the deadline to December 31, 2018, with the option of up to 24 months of additional time. Additional time is subject to FRA review and approval if railroads meet certain implementation milestones. Government, industry, and labor were supportive of extending the deadline.¹⁷

¹³ Letter from Carl R. Ice, President and CEO, BNSF Railway Co., to Senator John Thune, Chairman, Committee on Commerce, Science, and Transportation (Sept. 9, 2015); Letter from Luc Jobin, Executive Vice-President and Chief Financial Officer, CN, to Senator John Thune, Chairman, Committee on Commerce, Science, and Transportation (Sept. 10, 2015); Letter from Keith Creel, President and Chief Operating Officer, CP, to Senator John Thune, Chairman, Committee on Commerce, Science, and Transportation (Sept. 9, 2015); Letter from Michael J. Ward, Chairman and CEO, CSX Corporation, to Senator John Thune, Chairman, Committee on Commerce, Science, and Transportation (Sept. 9, 2015); Letter from David L. Starling, President and Chief Executive Officer, Kansas City Southern, to Senator John Thune, Chairman, Committee on Commerce, Science, and Transportation (Sept. 9, 2015); Letter from James A. Squires, President and Chief Executive Officer, Norfolk Southern Corporation, to Senator John Thune, Chairman, Committee on Commerce, Science, and Transportation (Sept. 9, 2015); Letter from Lance M. Fritz, President and Chief Executive Officer, Union Pacific Corporation, to Senator John Thune, Chairman, Committee on Commerce, Science, and Transportation (Sept. 9, 2015).

¹⁴ AMERICAN CHEMISTRY COUNCIL, ASSESSMENT OF THE ECONOMIC AND SOCIAL IMPACTS OF THE FAILURE OF CONGRESS TO EXTEND THE COMPLIANCE DEADLINE FOR POSITIVE TRAIN CONTROL (PTC) (Sept. 2015).

¹⁵ *Id.*

¹⁶ *About Positive Train Control*, AMER. PUBLIC TRANS. ASSOC., http://www.apta.com/mediacenter/ptbenefits/Pages/2015_1019_Positive-Train-Control.aspx.

¹⁷ Letter from John Risch, National Legislative Director, SMART Transportation Division, and Ron Kloos, National Vice President/National Legislative Director, Transportation Communications Union/IAM, to Congress (Sept. 30, 2015) ("support [...] legislation introduced by House Transportation and Infrastructure Committee leadership [...] to extend the deadline for the implementation of Positive Train Control (PTC)."); Letter from Cal Dooley, President and CEO, American Chemistry Council, to Congressman Bill Shuster, Chairman, Committee on Transportation and Infrastructure (Oct. 5, 2015); Letter from The United States Conference of Mayors to Congressman Bill Shuster, Chairman, Committee on Transportation and Infrastructure (Oct. 5, 2015); Letter from Texas Department of Agriculture Commissioner Sid Miller to Congressman Bill Shuster, Chairman, Committee on Transportation and Infrastructure (Oct. 5, 2015); Letter from Pennsylvania State Association of Boroughs, to Congressman Bill Shuster, Chairman, Committee on Transportation and Infrastructure (Oct. 20, 2015); Joint letter from American farmers, manufacturers, retailers, energy providers, and other freight rail customers to Congressman Bill Shuster, Chairman, Committee on Transportation and Infrastructure (Oct. 23, 2015); Letter from the National Industrial Transportation League to Congressman Bill Shuster, Chairman, Committee on Transportation and Infrastructure (Oct. 1, 2015); Letter from the National Retail Federation to Congressman Bill Shuster, Chairman, Committee on Transportation

PTC Financing

The Department of Transportation (DOT) has a number of grant programs and other financing options to assist railroads in implementing PTC. The Fixing America's Surface Transportation (FAST) Act (P.L. 114-94) authorized a PTC Grant Program in the wake of the PTC extension seeing the need for funds to assist railroads in implementing PTC. There is a matching cost share of 20 percent minimum of the total requested project cost. In 2017, FRA and Federal Transit Administration (FTA) had 27 total eligible projects from 16 states apply for grants, 17 projects from 13 states were selected and awarded grants which totaled the full authorization amount of \$197 million.¹⁸

In total, FRA and FTA have awarded more than \$1 billion dollars in grant funding to railroads to assist in implementation of PTC. Sources of grant funding are:

- \$475 million from FRA's High-Speed Intercity Passenger Rail (HSIPR) Grant Program;
- \$86 million from FRA's Railroad Safety Technology Grant Program;
- \$51 million in American Recovery and Reinvestment Act grant funding to Amtrak;
- \$116 million in annual capital grant funding to Amtrak (as of November 2017);
- \$197 million in Fixing America's Surface Transportation (FAST) Act PTC Grant funding; and ¹⁹
- \$106 million in FTA Formula Grant Program (as of June 2017).²⁰

In addition to grants, the Railroad Rehabilitation and Improvement Financing (RRIF) program and the Transportation Infrastructure Finance and Innovation Act (TIFIA) program are available for financing PTC implementation. Indeed, the FAST Act specifically prioritized PTC installation projects for RRIF funding. In May 2015, FRA issued a \$967.1 million loan to Metropolitan Transportation Authority (MTA) for Long Island Rail Road's (LIRR) and Metro-North Railroad's PTC implementation.²¹ On December 8, 2017, the Build America Bureau closed a \$162 million TIFIA loan and a \$220 million RRIF loan to the Massachusetts Bay Transportation Authority (MBTA) for PTC system implementation.²²

and Infrastructure (Oct. 5, 2015); Letter from States for Passenger Rail Coalition to Congressman Bill Shuster, Chairman, Committee on Transportation and Infrastructure (Sept. 29, 2015); Press Release, TTD AFL-CIO, Shuster-DeFazio Offer Sensible PTC Extension Bill (Sept. 30, 2015) (on file with Committee).

¹⁸ *Id.*

¹⁹ Federal Railroad Administration Briefing with House Committee on Transportation and Infrastructure on Positive Train Control (on file with Committee).

²⁰ Federal Transit Administration Awards for positive train control FY 16-17 spreadsheet (June 29, 2017) (on file with Committee).

²¹ *Id.*

²² *Id.*

PTC Mandate Progress

As of September 30, 2017, the freight industry has made substantial progress in implementing PTC since the extension was passed in 2015. According to FRA, 91 percent of all radio towers have been installed; 68 percent of locomotives have been equipped and are operational; 45 percent of route miles are in PTC operation; 82 percent of employee training is completed; and 59 percent of track segments are completed.²³

As of September 30, 2017, the passenger rail industry has made progress towards implementing PTC, with some entities making greater strides than others. Overall, 64 percent of radio towers are installed; 50 percent of locomotives are equipped and PTC operable; 24 percent of route miles are in PTC operation; 66 percent of employees are trained; and 25 percent of track segments are complete.²⁴

²³ *PTC IMPLEMENTATION STATUS BY FREIGHT AND PASSENGER RAIL*, Fed. Railroad Admin., <https://www.fra.dot.gov/app/ptcsummary/>.

²⁴ *Id.*

WITNESS LIST

Panel I

The Honorable Denny Heck
Member of Congress (WA-10)
United States House of Representatives

The Honorable Derek Kilmer
Member of Congress (WA-06)
United States House of Representatives

The Honorable Pramila Jayapal
Member of Congress (WA-07)
United States House of Representatives

Panel II

The Honorable Robert Sumwalt
Chairman
National Transportation Safety Board

Mr. Juan D. Reyes III
Chief Counsel
Federal Railroad Administration

The Honorable Edward Hamberger
President and Chief Executive Officer
Association of American Railroads

Mr. Richard Anderson
Chief Executive Officer
Amtrak

Mr. Paul Skoutelas
President and Chief Executive Officer
American Public Transportation Association

Mr. John P. Tolman
Vice President and National Legislative Representative
Brotherhood of Locomotive Engineers and Trainmen

OVERSIGHT OF POSITIVE TRAIN CONTROL IMPLEMENTATION IN THE UNITED STATES

THURSDAY, FEBRUARY 15, 2018

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON RAILROADS, PIPELINES, AND
HAZARDOUS MATERIALS,
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:31 a.m. in room 2167, Rayburn House Office Building, Hon. John J. Faso (Vice Chairman of the subcommittee) presiding.

Mr. FASO. The subcommittee will come to order.

Without objection, the Chair is authorized to declare a recess at any time.

I ask unanimous consent that members not on the subcommittee be permitted to sit with the subcommittee at today's hearing and ask questions.

Without objection, so ordered.

Good morning and welcome to the Subcommittee on Railroads, Pipelines, and Hazardous Materials. Before we proceed with our hearing, I would like to extend our deepest sympathies to those impacted by the recent rail accidents across the United States.

Today's hearing focuses on the implementation of Positive Train Control across the United States. And as we have seen, we are in need of an update. PTC is a complex system with a challenging implementation process for the railroad industry. Despite these challenges, safety is always a top priority, and we must investigate and find solutions to implementation obstacles, and that is the purpose of this hearing today.

I look forward to hearing from our witnesses today regarding the implementation status of PTC across the United States.

I would now like to recognize Ranking Member Michael Capuano of Massachusetts for 5 minutes to make any opening statement which he may have.

Mr. CAPUANO. Thank you, Mr. Chairman. It takes a guy named Faso to be able to pronounce my name. Thank you.

[Laughter.]

Mr. CAPUANO. Mr. Chairman, I ask unanimous consent to include the committee Democratic staff in today's hearing record.

Mr. FASO. Without objection, so ordered.

[The Democratic summary of subject matter is on pages 219–225.]

Mr. CAPUANO. Thank you, Mr. Chairman. Mr. Chairman, I generally keep my opening remarks brief because we are here today to catch up on PTC to see the results, see how it has impacted directly individual people, or its lack thereof, and to hear from the industry where they are on advancing it.

With all the problems we still have on this issue, we are making progress. Now, many of us would like that progress to be faster and cleaner and quicker and all that, but at least we are doing something.

At the same time, it cannot be—I don't think it should go unsaid today that this Congress has taken absolutely no action whatsoever to even try to address the gun violence in this country. The tragedy that we suffered in this country yesterday is unspeakable. It should be unacceptable to every single American. And for us to do nothing—nothing—should be angering, as far as I am concerned.

At least on this issue, with PTC, we are doing something. Nothing is not an answer. And with that I yield back the remainder of my time.

Mr. FASO. I would now like to recognize the chairman of the full committee, Mr. Shuster.

Mr. SHUSTER. Thank you very much, Mr. Faso and Ranking Member Capuano, for holding this hearing today. Thanks to our Members that are here today, show an interest, obviously, because tragedies occurred in your States and other places around the country.

Safety is the number one priority of this committee, and the most important task of the Department of Transportation. This committee and the Department of Transportation have always remained focused on efforts to improve rail safety, and Positive Train Control is one of the most ambitious, complex, costly enhancements the railroad industry has ever undertaken.

As early as 2012, GAO [Government Accountability Office] and FRA [Federal Railroad Administration] were reporting that railroads would not make the 2015 deadline. In 2015, Congress passed the bipartisan Surface Transportation Extension Act of 2015, which extended the deadline to December 31st of 2018 with wide support from industry, Government, and labor. At the time, we were hopeful this would help the railroads meet their implementation milestones.

And today I look forward to getting an update on the status of PTC implementation, and learn what the other major challenges are that still remain for the railroads.

When Congress extended the PTC deadline, we were informed of issues the railroad faced. Throughout the implementation process, railroads have faced a complicated, complex set of challenges. One of the biggest issues was the ability to obtain spectrum.

Both FRA and GAO have published multiple reports articulating the other obstacles faced, such as the integration of field testing of PTC components, the development of PTC technology, issues with availability of suppliers of PTC technology, radio interference, and interoperability issues. Today we are here to see if those issues, among others, still linger for the railroads.

So I look forward to hearing from our colleagues today, but also the folks who represent Government and industry, to give us a view of what is happening out there.

And, with that, I yield back.

Mr. FASO. Thank you, Mr. Chairman. Now I would like to recognize the ranking member of the committee, Mr. DeFazio, for an opening statement.

Mr. DEFazio. Thank you, Mr. Chairman. Let's dial back to 2005, a Norfolk Southern freight train transporting chlorine in Graniteville, South Carolina, diverted onto an adjacent track where it hit a parked train near a textile manufacturing plant. Nine people were killed, six workers at the plant. Five hundred people were injured, fifty-four hundred evacuated. This was preventable with PTC.

This committee held a hearing on this crash in 2007, just prior to passing a bipartisan bill in 2008—10 years ago—to mandate PTC implementation.

Graniteville is eerily similar to the one that just occurred in Cayce, South Carolina. The switch left in the wrong position. The train diverted onto the wrong track, hit a parked CSX train. Again, no signals indicating the switch position was open. And again, totally preventable with PTC.

So was the Amtrak accident in DuPont, Washington. You know, we had PTC on the train, on the track, but it wasn't yet operable. I have introduced legislation that will say that no new section of track can be utilized by Amtrak until PTC is operable. That is after the fact, unfortunately. That, again, totally preventable.

For 50 years now—half a century—NTSB has issued one recommendation after another for the FRA to require PTC. Over those 50 years, 153 accidents preventable with PTC. They resulted in 301 fatalities, 6,700 injuries, and yet we are not there yet.

The last time we held a hearing on this was 2015. We have a law that goes back to 2008. But we are not fully implemented. I hear a lot about the cost and the complexity. Let's think about the cost in lives that have been lost and could be lost in the near future because of the lack of PTC.

Some, a number of our Class I's and other freight and some commuter railroads, embraced PTC early on and have made progress, and I congratulate those who are going to make the deadline. Others are close. Some aren't very far along. In fact, some of the commuter railroads, in fact, I understand—New Jersey hasn't even started—you know, that they are—that they won't qualify under any conditions, even with the most lax Administrator in history—we don't have an Administrator—to meet the minimum requirements to get an extension beyond 2018.

I have heard that some are inquiring as to whether or not Congress might extend the deadline beyond 2020. We are going to kill more people because you are not doing your job? No. We are not going to extend PTC again, if I have anything to say about it.

Yes, it is complicated. But, I mean, again, 50 years ago—this is when it was first recommended. A year later we landed a man on the moon. We, you know—look at where we are now, with all sorts of advances in technology. And yet we don't have PTC.

You know, I have recommended to the administration that they include grant funding in their infrastructure plan to help some of the commuter railroads and others who are non-profits, having problems meeting these deadlines. Of course, there have been no allocations and no action.

You know, I don't know also how we can get a budget out of the administration where it actually cuts funding for FRA's oversight and enforcement of PTC by 50 percent. Fifty percent cut. Hopefully that cut is going nowhere in the United States Congress or in the omnibus negotiations.

There is a safety and operations cut by 30 percent, a 37-percent cut to automated track inspection. It doesn't seem that this administration is serious about safety, despite the lives lost recently. I hope this committee today in this hearing and with these witnesses can refocus the urgency of this matter, and focus the administration on this, and hopefully we will see full implementation by the end of 2018.

With that, I yield back the balance of my time.

Mr. FASO. I would now like to welcome our first panel, our distinguished colleagues from the State of Washington, Mr. Heck and Mr. Kilmer. Please proceed with your statement.

I ask unanimous consent that our witnesses' full statement be included in the record. And after receiving testimony from our first panel, we will proceed to our second panel for testimony.

Without objection, so ordered.

TESTIMONY OF HON. DENNY HECK, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WASHINGTON; AND HON. DEREK KILMER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WASHINGTON

Mr. HECK. Thank you, Mr. Chairman and Ranking Member Capuano. Thank you for holding this hearing today, and for all of your assistance in the wake of this unthinkable tragedy which struck in my district on the morning of December 18th.

It was a quiet Monday morning when Amtrak Cascades 501 derailed as it approached the Mounts Road bridge in DuPont, Washington. The locomotive and passenger cars were sent flying down onto Interstate 5 below at nearly 80 miles per hour, into the path of motorists who were going about their morning commute. Three people were killed in that commute, three passengers on that train: Jim Hamre, Zack Willhoite, and Benjamin Gran.

Jim and Zack were my constituents. They were also fierce advocates—that is why they were on the train, which was the inaugural Amtrak service on the new Point Defiance Bypass. Jim was a retired civil engineer, while Zack worked for Pierce Transit. As a board member of the Rail Passengers Association, Jim had actually visited me in Washington, DC, sat in my office to advocate for expanding passenger train service. The entire South Puget Sound continues to mourn the loss of these three individuals.

But they were not the only victims of this tragedy. Seventy passengers and motorists were injured. And, by the way, that included a delightful young woman named Maddie, who happens to be the niece of one of my staff members.

It is only thanks to the heroic work of the first responders and bystanders and doctors that the injured are still with us today. And I want to particularly commend the Active Duty servicemembers and civilians at nearby Joint Base Lewis-McChord, who rushed to help.

We are here today because we know this tragedy could have been avoided if Positive Train Control was active on the route. The NTSB has recommended that railroads install PTC for nearly 50 years. I am glad we have NTSB Chairman Robert Sumwalt with us today, and I want to thank them for all of their assistance.

But despite these consistent warnings, there has been an absolute failure to heed them. And it is a collective failure on the part of the Federal Railroad Administration, but also on the part of Congress, which has failed to meaningfully fund PTC implementation and enforce deadlines.

There are no excuses to be made here today. The Amtrak Cascades crash was preventable, as were over 150 other rail accidents the NTSB has investigated. That is why I support legislation from Ranking Members DeFazio and Capuano, which would provide the funding railroads across the country need to complete PTC on their routes.

I met on Monday with the head of the Washington State Department of Transportation, Roger Millar, and I was glad to hear that the Amtrak Cascade route is on schedule to have PTC implementation by the current deadline of December 2018. And the same goes for the freight railroads in my district.

But that is not the case for many railroads across our country. That is why, most importantly, the bill would prevent the U.S. Department of Transportation from extending the PTC deadline. Passing this legislation would send a clear message that there is no need for us ever to have this conversation again. No delays, no excuses.

For Jim Hamre, Zack Willhoite, and Benjamin Gran, I ask this committee and the Congress to act to prevent a crash like Amtrak Cascades 501 from ever happening in this country again.

Thank you, Mr. Chairman.

Mr. FASO. Thank you, Mr. Heck.

Mr. Kilmer, you are now recognized.

Mr. KILMER. Thank you, Mr. Chairman. I want to start by thanking you and Ranking Members Capuano and DeFazio for holding this important hearing and for inviting me to testify.

I had just taken the redeye back from—back to Washington, DC, and was trying to catch a quick nap when I got a call from a member of my team. The Amtrak 501 Cascades Express had derailed from an overpass over Interstate 5 at one of the busiest sections of our State's busiest freeway at rush hour. It was a worst-case scenario. The footage from news helicopters was harrowing. People were stopping on the highway and jumping into dangling, twisted train cars to offer their help.

And I immediately thought of my family, my wife, who works for the State of Washington, and regularly goes to Olympia. My first thought was was she on the highway, was she safe?

Just days earlier I had cut the ribbon on the new station in Tacoma in my district that would service the train on this route. And it felt like a bad dream.

So many families had the same feeling that I had that day. Too many families had loved ones who were hurt. Three families never saw their sons again. Ben Gran, Jim Hamre, and Zack Willhoite, their lives could have been saved by Positive Train Control.

I went down to the site on my first day back in State, and you could still see the marks in the track, the fingerprints of the crushing power 14 train cars traveling way too fast etch into metal as they leave the track. The NTSB said Positive Train Control would have prevented this and so many other train crashes that have become all too frequent.

In 2018 no American should die in a preventable train accident.

December 31, 2018, that is the deadline Congress gave the Nation's railroad industry to put this lifesaving technology on the tracks. The country has 319 days, and not a second more, because this deadline matters. As the committee knows, Congress has been working since 2008 to fully implement PTC nationwide, and there are railroads who have shown it is possible to meet this deadline.

BNSF, one of the largest railroad operators in this country, has fully installed Positive Train Control on all 11,570 miles of the track that they are responsible for, and it is operable on all 5,000 of their locomotives. They have shown that, with the right investments and oversight, this can be done.

But the country won't get there if this body doesn't take this deadline seriously. So thank you, Chairman and Ranking Members, for taking up our request to hold this hearing today. I also want to thank the ranking members for their leadership on H.R. 4766, a bill that would provide \$2.5 billion in grants to help the railroads to put Positive Train Control on the tracks. I am proud to cosponsor that bill, and I hope the committee will act on it soon.

But funding is just one part of the solution. We also need the Federal Railroad Administration to step up and ensure that the railroads are making progress. But I have serious concerns about the agency's capacity to do so, given the recent resignation of the interim Administrator.

Last month my good friend, Mr. Heck, and I led a letter to then-acting Administrator Heath Hall, asking for an update on the status of PTC implementation nationwide, and the steps he would take to ensure all of our railroads are on track to meet the deadline.

[The letter of January 18, 2018, to Federal Railroad Administration Acting Administrator Heath Hall from Congressman Derek Kilmer et al. is on pages 226–227.]

Mr. KILMER. Mr. Chairman, we are still waiting for their response. So I hope today's hearing will provide those answers because if that conversation doesn't happen, I am afraid this won't get done.

Americans deserve to know the trains they are taking to work or to visit loved ones are safe. They deserve a Government that is willing to work together with each other and with the railroads to

make this happen. So thank you for accepting our request to hold this hearing and for starting that work today.

Mr. FASO. Gentlemen, thank you for your testimonies. Your comments have been very helpful and thought-provoking.

And thank you, Mr. Heck, in particular, for recounting the issues and the lives of those who had been lost on that tragic day. So I appreciate that.

I welcome the second panel.

Mr. DEFAZIO. Mr. Chairman, while we are getting rearranged here, if I could have unanimous consent to speak for a minute out of order here, I—

Mr. FASO. So ordered.

Mr. DEFAZIO. I have had kind of a tough week, as you can tell from looking at me. And so I missed the fact that we do finally have an individual with experience appointed as head of the FRA, Mr. Batory. So I welcome him there. He has got a tough job ahead of him. And I hope that the committee, as soon as he can get settled in, will have him down to discuss this and other important issues.

Mr. FASO. I thank the gentleman. I would now like to welcome our second panel of witnesses.

On our panel today is Mr. Robert Sumwalt, Chairman of the National Transportation Safety Board; Mr. Juan Reyes III, chief counsel of the Federal Railroad Administration; Mr. Richard Anderson, chief executive officer of Amtrak; Mr. Edward Hamberger, president and chief executive officer of the Association of American Railroads; Mr. Paul Skoutelas, president and chief executive officer, American Public Transportation Association; and Mr. John Tolman, vice president and national legislative representative of the Brotherhood of Locomotive Engineers and Trainmen.

I ask unanimous consent that our witnesses' full statements be included in the record.

Without objection, so ordered.

Since your written testimony has been made a part of the record, the subcommittee would request that you limit your oral testimony to 5 minutes, giving us more time for questions.

Mr. Sumwalt, you may proceed.

TESTIMONY OF HON. ROBERT L. SUMWALT III, CHAIRMAN, NATIONAL TRANSPORTATION SAFETY BOARD; JUAN D. REYES III, CHIEF COUNSEL, FEDERAL RAILROAD ADMINISTRATION; EDWARD R. HAMBERGER, PRESIDENT AND CHIEF EXECUTIVE OFFICER, ASSOCIATION OF AMERICAN RAILROADS; RICHARD ANDERSON, PRESIDENT AND CHIEF EXECUTIVE OFFICER, AMTRAK; PAUL P. SKOUTELAS, PRESIDENT AND CHIEF EXECUTIVE OFFICER, AMERICAN PUBLIC TRANSPORTATION ASSOCIATION; AND JOHN P. TOLMAN, VICE PRESIDENT AND NATIONAL LEGISLATIVE REPRESENTATIVE, BROTHERHOOD OF LOCOMOTIVE ENGINEERS AND TRAINMEN

Mr. SUMWALT. Thank you, Mr. Chairman. Good morning. Vice Chairman Faso, Ranking Member Capuano, members of the subcommittee, thank you for having us.

Since the enactment of the Rail Safety Improvement Act of 2008, the NTSB has completed investigations of 22 accidents that could have been prevented by PTC. Together, these accidents have resulted in 23 deaths, over 300 injuries, and over \$126 million in property damage. And, of course, we are currently investigating two additional recent accidents that could have been prevented by PTC.

As you have heard, 2 months ago, on December the 18th, Amtrak train 501 derailed onto Interstate 5 near DuPont, Washington. The train was traveling at 78 miles an hour, around a curve where the speed limit was 30 miles per hour. Our investigation is ongoing. However, this is precisely the type of accident that PTC is intended to prevent. If PTC had been operational, it would have detected the overspeed and taken action to stop the train before the accident.

Most recently, early last week, a southbound Amtrak train unexpectedly entered a siding near Cayce, South Carolina, and collided with a stationary CSX freight train. Investigators found that the track switch was lined and locked in a position that would divert southbound trains into that siding.

The investigation will, among other things, focus on why the rail switch was aligned for that siding, rather than the track that the Amtrak was intended to operate over. A fully operational PTC system is designed to prevent accidents where switches are left in the wrong position.

At the time of the accident, train signals that govern train movement were out of service due to signal upgrades. This morning the NTSB issued an urgent safety recommendation to the FRA, and we are calling for the FRA to issue an emergency order to put in place procedures to mitigate hazards when trains are operating during signal suspension. And I will be happy to discuss this further if there are questions.

A decade ago the Congress called for PTC to be installed by the end of 2015. However, the railroads, despite their efforts, the railroads indicated they would not be able to meet that deadline. So Congress extended that deadline until the end of this year. Now data provided to the FRA by railroads indicates that many of the Nation's railroads will not meet that deadline for fully operational PTC, resulting in up to 2 years of additional delay.

For nearly half a century the NTSB has investigated numerous train collisions and derailments caused by human failures. And these accidents could have been prevented by PTC. Therefore, the NTSB is extremely concerned about any further delays to this life-saving technology.

Quite simply, for each day that passes without PTC, we are at continued risk for preventable PTC accidents. And, from a safety perspective—and that is the NTSB's perspective—from a safety perspective, that risk is unacceptable.

Thank you for your time, and I will be glad to answer questions.

Mr. FASO. Thank you, Mr. Sumwalt.

Mr. Reyes, you may proceed.

Mr. REYES. Vice Chairman Faso, Chairman Shuster, Ranking Member Capuano, Ranking Member DeFazio, and members of the subcommittee, thank you for inviting me to discuss the Federal

Railroad Administration's oversight of Positive Train Control implementation in the United States.

In light of the recent accidents, much of the Nation's time and attention has been rightly focused on ensuring that all critical safety measures are in place within our rail system. Safety is FRA's top priority. Under the leadership of Secretary Elaine L. Chao, FRA develops and enforces safety regulations, invests in rail infrastructure, and conducts research and development to advance innovation.

PTC is an advanced safety system designed to prevent certain types of accidents. For example, this technology can prevent a train from passing a stop signal or moving through an improperly aligned switch. Currently, 41 railroads are subject to the statutory PTC mandate, including 7 Class I railroads, 30 commuter and intercity passenger railroads, and 4 short line railroads.

PTC systems are being implemented on approximately 60,000 miles of the 140,000-mile national rail network. The Rail Safety Improvement Act of 2008 mandated PTC system implementation by December 31, 2015. In late 2015, the House and Senate passed the Positive Train Control Enforcement and Implementation Act and the FAST Act. These acts extended the deadline for full implementation of PTC systems to at least December 31, 2018.

These acts also allow railroads to request an alternative schedule with a deadline no later than December 31, 2020. The railroad must submit a written request to FRA to demonstrate that it has met the statutory criteria for additional time. The FAST Act prohibits FRA from requiring railroads to fully implement PTC systems by December 31, 2018.

FRA considers full PTC implementation to mean that an FRA certified and interoperable system has been fully installed and is in operation by the host and required tenant railroads on all route miles subject to the mandate.

Throughout 2017, FRA continued to take many actions to provide technical assistance to help railroads implement PTC systems in a timely and safe manner. On December 27, 2017, Secretary Chao issued a letter to all 41 railroads stressing the urgency and importance of implementing PTC systems and meeting the statutory deadline. Since December 2017, myself and FRA leadership have met individually with each railroad subject to the PTC mandate to ensure PTC systems are being implemented as efficiently as possible, and to identify any challenges the railroads continue to experience.

During FRA's recent meetings, railroads commonly conveyed some ongoing challenges, including: a limited number of PTC system vendors and suppliers, technical and reliability issues with PTC system hardware and software, lack of progress by tenant railroads on equipping locomotives with PTC, delays in testing interoperability, and lengthy time to negotiate contracts with vendors and suppliers.

Since 2009, FRA and DOT have awarded about \$2.3 billion in grants and loans to support railroad PTC system implementation, including \$925 million in grant funding and \$1.35 billion in TIFIA [Transportation Infrastructure Finance and Innovation Act] and RRIF [Railroad Rehabilitation and Improvement Financing] loans.

FRA has a task force of career employees and contractors dedicated to PTC who support railroad's implementation of PTC systems. FRA is also recruiting additional staff to help manage the surge as the deadline approaches.

In conclusion, railroad's successful implementation of PTC systems is a top priority for the Department and FRA. Given the complexity of implementing these lifesaving systems, it is imperative that the railroads and suppliers focus their attention on meeting the congressional deadline. I appreciate the committee's assistance in ensuring that our Nation's railroads implement this rail safety technology in a timely manner.

Thank you, Mr. Chairman, for the opportunity to testify. I am happy to answer any questions.

Mr. FASO. Thank you, Mr. Reyes.

Mr. Hamberger, you are now recognized.

Mr. HAMBERGER. Thank you, Vice Chairman Faso, Mr. Capuano, Mr. DeFazio, members of the subcommittee. Thank you for the opportunity to appear before you today to discuss Positive Train Control and the progress of implementation of that technology across the U.S. rail network.

First I want to reaffirm the rail industry's commitment to implementing PTC, which we can all agree will, in fact, add an important layer of safety to the Nation's railways. My appearance today is specifically focused on AAR's Class I freight railroads, their PTC progress to date, how they are working to get it right, and when we are going to complete the job.

On all fronts the Class I railroads have made tremendous progress. By the end of 2017, the vast majority of installation was complete. Seventy-eight percent of locomotives were equipped with PTC. Ninety-three percent of wayside interface units were installed. Ninety-seven percent of radio towers installed. Eighty-seven percent of required employee training done.

Furthermore, at the end of 2017, the Class I railroads already had in operation more than 30,000 miles, 56 percent of the required PTC network. As the law clearly states, by the end of 2018 each Class I railroad is required to complete the installation of all wayside, back office, and locomotive hardware required for PTC. Each Class I railroad is required to have implemented PTC on at least 51 percent of its miles or territories, and all Class I railroads will meet or exceed this statutory requirement.

But, as I mentioned, not only do you have to install it, you have to make sure that it works. PTC development has been an immensely complex undertaking from day one. Railroads have focused on developing and testing technology that would meet the RSIA [Rail Safety Improvement Act] requirements, especially nationwide interoperability. From developing the central software and hardware, rigorous and repeated testing is the only way to ensure this system works as intended.

In addition to initial testing in a simulated laboratory environment, these components must be installed and exposed to day-to-day operations to verify that each individual part and the system as a whole will function properly. As this subcommittee knows, we don't operate in a laboratory; we operate in various climates and weather conditions outside, across the country.

When there is a failure of even a single PTC component, trains are not able to operate normally on affected rail lines until the failure is corrected, a situation railroads are currently facing as PTC is rolled out. The railroads are working hard to limit negative impacts on their customers, both passenger and freight, but this, unfortunately, will be a fact of life, particularly until the system fully matures.

Additionally, it is common for one railroad's locomotives to operate on another railroad's tracks, and PTC systems must be fully interoperable across all the Nation's railroads—again, including passenger and freight. This adds another layer of complexity to the testing. Ensuring this interoperability is no easy task, and all railroads will continue to resolve challenges that will inevitably arise, and which Congress anticipated and provided for in its 2015 law.

In light of this law, it is critical for FRA to clarify and apply its regulations, not updated since the passage of the 2015 law, to account for the fact that different railroads will meet full implementation at different times. After all, the intent of the early adopter provision was to encourage each railroad to achieve full implementation as soon as practicable.

[Slide]

Mr. HAMBERGER. So what can we expect in the future to complete the job? By the end of 2018, each Class I railroad will have completed PTC installation: 100 percent of wayside, back office, and locomotive hardware installed; 100 percent of spectrum in place; 100 percent of required employee training complete. When it comes to route mile operations, approximately 80 percent, or over 40,000 miles—80 percent of all PTC-required network miles will be in operation by the end of this year.

While several Class I railroads plan to be fully implemented by the end of 2018, all Class I railroads will be 100 percent implemented no later than 2020.

The bottom line is each day the PTC footprint is expanding, meaning that each day risk is being reduced on the Nation's rail network.

I look forward to answering your questions.

Mr. FASO. Thank you, Mr. Hamberger.

Mr. Anderson, you may proceed.

Mr. ANDERSON. Thank you, Mr. Chairman. And thank you, Ranking Member and members of the committee, for giving me the opportunity to speak to you today. My name is Richard Anderson, and I started on January 1 at Amtrak as the president and CEO, following my tenure as being co-CEO since last July under Wick Moorman.

Previously, I served over 17 years as the CEO of Delta Air Lines, the CEO of Northwest Airlines, and the chief operating officer of Northwest Airlines. Previously, I also served as the president of the commercial businesses of United Health Group, and I would note I started as a felony prosecutor in Houston, Texas.

After 45 days on the job as the only Amtrak CEO without a background in rail, I have a novel perspective. While many may have doubted in 1971, as I look at the history of Amtrak, that it would be a growing business and that passenger rail would be in vogue today, it is. And, as congestion grows in major metropolitan

areas and a generation of millennials prefer ridesharing to car ownership, Amtrak services and our infrastructure support hundreds of millions of rail transportation trips a year.

But it is clear that during our 47-year history we have underinvested in rail, especially in aspects of the safety systems of passenger rail. Amtrak is operated, essentially, as a freight railroad carrying passengers, rather than a world-class passenger transportation company. Our freight partners have done an incredibly good job significantly improving safety across all the Class I railroads, and the records show that.

Mr. FASO. Mr. Anderson, could you try to speak more directly into the mic?

Mr. ANDERSON. Oh, sure. That helps.

Mr. FASO. That helps, yes.

Mr. ANDERSON. Maybe it is a good idea to not—

Mr. FASO. Can you repeat the part about the freight rail?

Mr. ANDERSON. Yes, repeat the part about the freight railroads.

Passenger rail must adhere to a much higher standard, because our trains will carry over 300 human beings. So we have to, as an industry, for passenger rail, establish a much higher level of care and a standard of care.

With passenger rail now a significant component of our Nation's transportation system, we must increase our level of sophistication and investment, and we have begun this process at Amtrak, and we are going to bring this safety culture and the safety operations of aviation to passenger rail in America.

The recent incidents—train 501 in DuPont, Washington; Crozet, Virginia; train 91 in Cayce, South Carolina—have conclusively demonstrated the pressing need for a Safety Management System [SMS] system at Amtrak. Toward that end we hired a new executive vice president and chief safety officer, Ken Hylander, reporting to me—he implemented SMS systems for me at two airlines—who will implement our SMS program as recommended by Chairman Sumwalt on November 15, 2017, in an NTSB report. An SMS system is a proactive management system that has been the foundation of the tremendous safety progress in aviation. This is a solved problem; we have to take our experiences, our data tools, and the capabilities from aviation and apply them to passenger railroads.

Additionally, Amtrak continues to work on implementing many new specific safety measures, which I cover in written testimony. The most important is PTC. To start, we believe that PTC should ultimately be in place for all Amtrak routes. And as a matter of U.S. policy, PTC should be required for all passenger rail trips in America. That is a very big statement.

Without PTC, the system is too vulnerable to single points of failure, many of which are dependent upon the memory of a single human being interacting with a big, complicated system. Crews must memorize routes, signals, landmarks, and other indicia of the external world when they qualify on a route. When an engineer loses situational awareness or forgets a rule, we have no systems to assist them and help them prevent that error. We built all those systems in aviation; we haven't built them in passenger rail. So PTC is a fundamental building block to building an SMS system.

Amtrak has long been a leader in PTC. It is installed on nearly all of the Northeast Corridor today, the busiest railroad in America. We are set to complete PTC installation on the tracks and equipment we own or control by December 31, 2018, the Federal deadline. We have great cooperation with our partner host railroads, particularly the Class I railroads.

For those areas of our network where we do rely on others, we have to closely cooperate with them, because the host railroad, Amtrak, and the manufacturers of the equipment all have to cooperate to get the systems installed, tested, and working properly.

It is an enormous and complicated undertaking for the industry and its suppliers, but we all share a sense of urgency. And having said that, it is now clear that Amtrak, FRA, Congress, and the various railroads are likely to confront scenarios where PTC is not yet operational by the end of the year.

First, many routes outside the NEC [Northeast Corridor] will face a situation where the host railroads will apply to FRA for an alternative PTC implementation schedule. At Amtrak, that question raises for us whether, even if that alternative is approved, whether we will even operate.

Second, there are host railroads that appear unlikely to achieve sufficient progress to apply for the alternative PTC implementation schedule. And for those segments, Amtrak will suspend operations.

Third, a small portion of services operate on routes that have received FRA mainline track exclusions, which exempt them from the PTC requirements. We are newly reviewing under our SMS program our policy regarding these exclusions. And for those instances where we will not have PTC, even after the 12/31 deadline—because it is not required by statute—we have a question about whether we are going to operate at all. And I doubt we will.

Lastly, there may be railroads that operate over our NEC tracks which may not have sufficient PTC-commissioned rolling stock to operate normal services by the end of the year. Under the present rules, we cannot permit non-compliant equipment on our railroad after the deadline, and we are working with these railroads and the FRA to determine the path forward.

Fortunately, Ron Batory is now the Administrator of the FRA, and he is doing a good job leading an effort to coordinate the work on behalf of all the railroads in America to get all the impediments out of the way, so that we can get as much of it done as we can.

Taken together, I believe historic strides are being made, and everybody is working as hard as they can. I have great confidence in Amtrak's workforce. There is a lot of really hard-working people at Amtrak that want to do right. And I see across our company the desire to become the safest passenger railroad operation in the world. We owe you, our owners, nothing less; our customers, nothing less. Thank you.

Mr. FASO. Thank you, Mr. Anderson.

Mr. Skoutelas, you can proceed.

Mr. SKOUTELAS. Vice Chairman Faso, Ranking Member Capuano, members of the subcommittee, thank you for the opportunity to testify today. I am Paul Skoutelas, president and CEO of the American Public Transportation Association, known as APTA.

I have submitted a detailed, written statement, but want to highlight a few key points with you.

First, I want to reiterate APTA's unequivocal commitment to safety, including Positive Train Control installation. Safety is APTA's number one priority. As a former transit agency CEO, I know that safety is more than an operating principle and a promise to our riders. It is a core value of every public transportation professional.

APTA is an industry-recognized standards development organization. We created the rail transit safety audit program in 1989, which all commuter rail agencies' safety management program plans are based upon. As an association, APTA publicly supported the concept of PTC, even before the Rail Safety Improvement Act of 2008 was enacted.

We have also brought together key stakeholders through PTC technical summits, user groups, and other programming that we do at APTA meetings and conferences, foremost in an effort to tackle the complexities of installing PTC. These efforts have helped facilitate implementation by sharing information and coordinating efforts to solve the issues as they arise.

Commuter railroads have faced and continue to face a variety of complex challenges in installing PTC systems. PTC was still being developed in 2015, and only after the technology was available could railroads begin installing and testing the systems, while concurrently providing service to millions of Americans.

A one-size-fits-all approach to implementation does not exist when it comes to PTC installation. This means that each passenger rail system needs to build its own unique PTC solution, which has created challenges and delays. Many commuter railroads have done a commendable job overcoming significant hurdles, including unique technical obstacles, limited access to skilled professionals and suppliers nationwide, very complex operating environments, and, of course, tight budgets.

With so many agencies implementing PTC at the same time, the lack of expertise and resources in relevant fields has limited the ability to expedite implementation at each stage of the process. To date, the full cost of implementation of PTC is estimated to be approximately \$4 billion for commuter railroad agencies. This does not take into account future operating and maintenance costs, which are currently estimated to range from \$80 million to \$130 million, annually. Nor does it include the \$90 billion of state-of-good-repair backlog facing public transportation systems today.

This is a staggering number for publicly funded agencies that rely on Federal, State, and local funding, as well as passenger fares to operate their services. We request that Congress and the administration consider these costs and provide additional funding.

The public transportation industry is also concerned that FRA may not have enough highly skilled staff to respond to the magnitude of documentation that is required for PTC approval, especially as we approach the end of 2018. APTA urges Congress to ensure FRA has the resources and technical staff available to facilitate PTC implementation.

APTA continues its active role in support of PTC installation and implementation. We are committed to becoming a safer industry

every day. In pursuit of this goal, APTA will continue its technical user group meetings and hosting various forums, which have proven to be indispensable to the industry. These sessions have brought a focus on lessons learned from those who are further along in implementation, and they work to establish common formats for critical submissions and actions, which will facilitate a faster review process by FRA.

APTA will also continue making PTC implementation a key topic, an urgent topic, at its major meetings throughout the year.

Let me close by saying the public transportation industry relies on public support and public trust. Our transit systems recognize that we must earn that support and trust every day. Public transportation generally, and commuter passenger rail specifically, are among the safest modes of transport. In fact, public transportation passengers are generally 40 to 70 times less likely to be in an accident than drivers and passengers in private automobiles.

As an industry, we will continue to focus on safety, and continue to improve it every day. APTA is grateful for the work this committee has done to enhance safety in our Nation's railroads, and we applaud your efforts. We look forward to continuing to work with you and your staff on the critical PTC issues and on other issues facing the public transportation agencies.

Thank you.

Mr. FASO. Thank you, Mr. Skoutelas.

Mr. Tolman, please proceed.

Mr. TOLMAN. Vice Chairman Faso, Ranking Member Capuano, members of the committee, I appreciate the opportunity to testify today.

As I sit here today, I am embarrassed, I am hurt, I am frustrated, and nearly distraught that we are here once again to discuss a major safety issue that was recommended a long, long time ago. I grew up in the railroad industry, and I truly am anguished when I hear again and again of an accident that could have been prevented by PTC.

I was here in 2008 when you passed the Rail Safety Improvement Act. I testified in front of this committee on behalf of the membership. One of our member's parents was here, trying to educate Congress in hopes that their 28-year-old son, Chris Seeling, would not die in vain on January 6, 2005. He lost his life in an accident very similar to the recent accident in South Carolina that the NTSB said could have been prevented by PTC.

You know, there is something in this room that we all can agree on without a doubt: nobody—nobody—should ever, ever go to work and not come home. It is our duty in this room, from this day forward, to make sure to work tirelessly to get this thing done.

The NTSB told the industry as far back as 1968 to implement some form of technology, accident prevention technology. It was 50 years ago. It took us less than 9 years to put a person on the moon, and the industry can't get this done?

In fact, NTSB said in May of 2002, 40 to 60 accidents each year could be prevented by PTC—40 to 60 each year. The NTSB noted that from 1968 to 2015, PTC could have prevented 145 major accidents that killed 288 people and injured 6,574 when the agency first had recommended the technology. Official damages have to-

taled hundreds of millions of dollars, not counting the economic and emotional burden borne by the victims and their families.

These numbers do not include the recent accidents outside of Tacoma, Washington, that claimed 3 lives and injured 70 people, or Cayce, South Carolina, a collision that killed a locomotive engineer, Michael Kempf, age 54, one of our members, and conductor Michael Cella, age 36, a SMART member, and injured 116 people. While the NTSB is still investigating these tragedies, they have stated publicly that PTC could have prevented both of these tragedies.

Now, some might say that I am not being fair because there are railroads that are going to get this done by 2018, and I sincerely applaud those who do. But there are several others that won't get this done by the deadline.

Mr. Chairman, if I may take an opportunity to mention a few other safety issues that the industry hasn't addressed, and the number one issue—unsafe issue—is fatigue. This issue is as old as everybody in this room. The Rail Safety Improvement Act amended U.S. Code title 49 by adding section 20156, titled the "Railroad Safety Risk Reduction Program," mandating that the FRA require the railroads to develop, jointly with labor, and update at least every 2 years, a fatigue management plan for safety-critical railroad employees to reduce the likelihood of accidents, incidents, injuries, and fatalities caused by fatigue. To date this process remains stalled. And to say we need to treat sleep apnea to fix fatigue is like the industry is treating a symptom and not the disease.

Another issue I would like to mention is the Safe Freight Act, which would require freight railroads to have two-person crews on all freight trains, just like Congress mandated the airline industry do for safety.

The conductor works to support the engineer in operating the train, observing all train and track conditions. Having two federally certified people in the locomotive cab is not a waste of money or an outdated practice. Even with sophisticated technology, nothing—nothing—can currently compare to having a trained human who can react to and manage potential dangerous situations on-board.

Thank you, Mr. Chairman.

Mr. FASO. Thank you, Mr. Tolman. I will begin questioning, and we will limit questions to 5 minutes.

What I wanted to ask the panel—in your view, what are the single biggest obstacles we have to implementing this as a technology? Is it money? Is it the timeline that has already been extended? Perhaps starting with Mr. Reyes, if we could respond to that, because the public definitely is perplexed at this question.

Mr. REYES. OK, all right. As I stated in my—

Mr. FASO. Pull the mic closer.

Mr. REYES. OK. As I stated in my opening, on December 27th, Secretary Chao sent a letter expressing her concern—the implementation of PTC, and the urgency that it get done.

We met with 41 railroads, 30 commuter, 7 Class I railroads, and—as well as Amtrak. And what we are finding is that there—the issues are really that there is a limited number of vendors and

suppliers. The Class I and many of the commuter railroads share the same vendors.

There are also issues with reliability. As the railroads are installing 100 percent of their equipment, and as they are setting their back offices up and doing service demonstration, they are finding that there are false stops. And so it takes a while to work out the problems with the software. So that can be—that is a problem.

There has not been a lot of—there have not been many of the commuter railroads that have stated that money is really the issue. My agency, FRA, and the Federal Transit Administration have issued about \$2.3 billion in loans and grants for the railroads for them to implement this. It seems to be more to do with these technical issues, as well as negotiating with—for the contracts, because a lot of the freight railroads started earlier than the commuter railroads, and now they are catching up, and they are having trouble getting the resources they need to get this done on time.

Mr. FASO. OK. Mr. Hamberger?

Mr. HAMBERGER. In addition to those challenges, the biggest single challenge yet left is interoperability. And, you know, we say that, we throw that word around. What do I mean by that?

Chicago is, of course, the biggest example of it, but it occurs wherever more than one railroad is operating. You have railroad 1 locomotive operating on railroad 2's track, with a back office server owned by railroad 3. And each Class I railroad, of course, over the years, has developed its own dispatch system, its own IT platform. So all of those communications have to occur in real time, so that that locomotive knows whether or not it is exceeding its authority.

And so it is that kind of melding together of all of the various railroad technologies that is the single biggest challenge. And that is why we are talking about interoperability testing with Amtrak as what is left to get done, and that is beginning—I believe in March, if I am not mistaken, Richard—so that—the goal being that the host railroads and Amtrak have worked through that, so that by the end of the year, hopefully everything has been worked through so that Amtrak is operating under PTC—

Mr. FASO. And in the minute I have left, Mr. Anderson, could—because you are operating on other people's track, predominantly. I see that in the Hudson Valley line that I am the most familiar with. Can you discuss the interoperability issue, in terms of how Amtrak is trying to relate to this?

And we saw the Metro-North accident that we had on that line, which you all operate over. Talk to us about the difficulties of operating on track that someone else owns.

Mr. ANDERSON. Amtrak must have interoperability with 15 different back office servers.

Mr. FASO. Fifteen?

Mr. ANDERSON. Fifteen. And we operate three different PTC systems, depending upon where we are. So, in Michigan we have one system. The corridor has another system. And then we operate on the Class I freights, we have a third system. So we have to federate with 15 different hosts' servers.

Mr. HAMBERGER [in an aside to Mr. Anderson]. They don't know what federate means.

Mr. ANDERSON. Make it interoperable. And so, it is the coordination with all of them.

And then, on pieces of the corridor where you are talking about, we are hosted by Metro-North.

Mr. FASO. Right.

Mr. ANDERSON. So it depends upon who the host is, but we have to be able to do so with each one of them.

I can tell you in all of the Amtrak-controlled pieces of the network, we will be ready. Let me give you the constraint—I will do it quick.

Mr. FASO. Be quick.

Mr. ANDERSON. Siemens, Alstom, Wabtec, Arinc, Rockwell Collins—everybody needs all those vendors to produce software, hardware, get it tested, and get it ready to get installed quickly.

Mr. FASO. Thank you.

Mr. Capuano?

Mr. CAPUANO. First of all, I would like to ask unanimous consent to insert into the record the statement of Representative Pramila Jayapal. She was detained in another hearing and couldn't join us—

Mr. FASO. Without objection, so ordered.

[The statement of Congresswoman Pramila Jayapal is on pages 48–51.]

Mr. CAPUANO. And with that, I am going to reserve my time and let Mr. DeFazio go first.

Mr. DEFAZIO. Thanks, Michael, I appreciate it.

The NTSB this morning, I understand, issued an urgent recommendation regarding what actions railroads should take during signal suspensions.

I am hearing CSX is saying, oh, well, we had to shut down the signal because we were installing the new system. A, I question whether that is true. And, B, if they are shutting down an existing signal, my understanding is some railroads require that flaggers or other people be out there and some don't. Can you tell me what is going on here?

Mr. SUMWALT. Well, Congressman DeFazio, thank you very much. Of course we are still looking into all of the options for what could have been put in place for the Cayce accident, but our urgent recommendation that we issued this morning to the FRA is that once signal suspension is in effect, and a switch has been reported to be relined for the main track, as was the case in Cayce, we want the first train that goes through that switch to operate at restricted speed. That way it is at a much-reduced speed, they can detect that the switch, just visually, is not lined properly before they even encounter it.

After it has been verified that that switch is properly lined, then normal speed, track speed, can resume.

Mr. DEFAZIO. OK. But, I mean, my question is when one switch is over from the existing technology to the new technology, you know, is it inevitable that the old technology can no longer function, or the signal lights won't function in that section of track? If so, it seems like we need to have some sort of a rule for what is going to happen there.

Mr. SUMWALT. Well, I would actually have to defer to the railroad experts to be able to determine that. Our expertise is investigating—

Mr. DEFAZIO. OK, all right. Well, all right. Any ideas on that, Mr. Reyes, at FRA? I mean because we are going to be switching over a lot of systems in the next year and a half here or so, or year.

Mr. REYES. Yes. You know, I actually do have my head of safety, Bob Lauby, here. And we were discussing this request this morning. And if this is something that does make sense, we will implement whatever needs to be done to keep the public safe.

Mr. DEFAZIO. OK, thanks. Now, there is the dark territory, which is of concern. And then in 2008 Congress required the Secretary to prescribe standards, guidance, regulations, or orders governing development and implementation of safety technology in dark territory, such as switch position monitoring devices or indicators. It makes up a lot of the rail network. Have we made progress on this? None, Mr. Sumwalt? None, whatsoever? OK.

Mr. SUMWALT. No, sir. We did issue that recommendation as a result of the Graniteville accident, and we closed that recommendation, "closed unacceptable action."

Mr. DEFAZIO. "Closed unacceptable action"? How come there is no action, Mr. Reyes?

Mr. REYES. At this point, when there are safety issues, we believe that PTC is helpful in many of the situations—

Mr. DEFAZIO. Right, but we are talking about dark territory, it is not going to work there. So tell me.

Mr. REYES. Right. So in—well, when you are talking about dark territory, if you are talking about something that is going to prevent train collisions, overspeed, problems in work zones—

Mr. DEFAZIO. Switch problems, et cetera.

Mr. REYES [continuing]. Or switch problems—

Mr. DEFAZIO. Right.

Mr. REYES [continuing]. OK, these are the areas where PTC would help. If—PTC, I believe, is helpful throughout many of the situations.

Mr. DEFAZIO. OK.

Mr. HAMBERGER. It is my understanding, if I might jump in, Mr. DeFazio, that, in fact, Positive Train Control, in dark territory, switch indicators are being installed, and will be part of the final PTC systems.

Mr. DEFAZIO. OK, so they will—

Mr. HAMBERGER. So that will address the—

Mr. DEFAZIO. They will show up on the screen, on the—

Mr. HAMBERGER. It will. I don't know exactly the technical way it is working, but it is designed to achieve what you want to achieve, and that is to not give the train authority if the switch is in the wrong alignment. Correct.

Mr. DEFAZIO. Right.

Mr. HAMBERGER. This is one of the requirements—

Mr. TOLMAN. Mr. DeFazio? If I may?

Mr. DEFAZIO. Yes.

Mr. TOLMAN. If I may speak to that, switch point indicators could be radio transmitted to a dispatcher that would tell the train that the switch is open and improperly lined. That could have happened

when they took that track off—section in South Carolina out of service. They could have had a switch point indicator there and told them that the switch is improperly lined.

Mr. DEFAZIO. All the technology exists today, you are saying?

Mr. TOLMAN. Technology has been studied by BNSF Railroad since 2004, and it does exist, and it is—I believe it is ready, willing, and able to be implemented. And, you know—

Mr. HAMBERGER. And I believe the answer to Mr. DeFazio's question is that it is being implemented as part of Positive Train Control in dark territory.

Mr. DEFAZIO. All right.

Mr. TOLMAN. Yes, you said that, but there is 40,000 miles of dark territory track.

Mr. HAMBERGER. I just answered his question.

Mr. DEFAZIO. OK, I am over on my time, but I—we will need to get into this a little more, because this is a major issue, particularly for Amtrak. So thanks very much. Thank you.

Mr. FASO. The gentleman from Texas, Mr. Weber, you are recognized for 5 minutes.

Mr. WEBER. Thank you, Mr. Chairman. Golly, so many questions, so let me just get to the—a quick one. Positive Train Control, Republican retreat last week, there was a—or I guess it was last week, there was a collision. Does PTC identify vehicles coming to the intersection?

Mr. HAMBERGER. No.

Mr. WEBER. Is there any thought about that?

Mr. HAMBERGER. That certainly is something that, I assume, once the PTC system is installed, I think railroads will be taking a look at what additional—PTC 2.0, so to speak, what additional things can be done. And obviously, grade crossing safety is something that will have to be looked at.

Mr. WEBER. It was mentioned earlier—and I forget which one of you all said it—that there are a limited number of suppliers for this information—I mean for this technology. And the choices are few, I guess.

How do you get to the point where we have a—then you mentioned—I think, Ed, you mentioned different IT platforms. How do you get to the point where you have interoperability, where you get to the same platform and one system? What does that look like? Anybody? You can throw that on—

Mr. ANDERSON. Amtrak has three platforms. And there is nothing technologically that prevents the three platforms from interoperability, or for us to be able to operate our railroad with three separate PTC platforms.

Now, we are going to have to have some locomotives that are double-equipped, so they have the hardware in the cab of the locomotive for both the Michigan service and the service that we operate over the Class I host. You would like for better simplicity, but it is what it is, and it can be made to work fine.

Mr. HAMBERGER. I believe the word “federated” is what the technical folks use to describe the pipe of communication between a back office server and the locomotive and between the locomotive and the other railroads' back office servers. And so that has to be established, you know, on basically a bilateral basis between every

railroad that is operating over your track. And the Class I railroads operating on the Northeast Corridor have to be dual-equipped, as well, because they have to be able to work with ACSES—the name of the Amtrak system—as well as I-ETMS, so——

Mr. WEBER. Let's stay on——

Mr. HAMBERGER. I think——

Mr. SKOUTELAS. If I could just add just a quick point to that, just to say that the commuter railroads really operate on kind of a diverse operating environment. For the most part, many of them operate with freight railroads. And so the PTC solution has to be one of interoperability, as you have heard. In the cases where they are operating alone, where there is no freight, then they perhaps can operate with a different, more simplistic PTC solution.

But again, there is so much diversity among the railroads, the commuter rail side, and where they operate, the operating characteristics, the layouts of their trackage and so forth, that it really does take a unique PTC solution for each one.

Mr. WEBER. And that is an interesting thing about Amtrak. I was looking through the percentages here. It looked like the rest of the other rail lines—and I didn't do all the math, but they talked about, you know, the amount of training for their people, they talked about the length of tracks, and so on and so forth. The percentages were higher for the railroads, but Amtrak was probably about two-thirds of that kind of progress. And yet you run on most other people's tracks. Is that right?

Mr. ANDERSON. That is correct.

Mr. WEBER. Why the difference? Why are they so far ahead in implementation?

Mr. ANDERSON. Well, it depends on where you are looking. In the Northeast Corridor, we are in great shape, and we have had PTC in the Northeast Corridor in good shape for a long time. On the route we own in Michigan, we have PTC in place.

In a number of the other locations, it is dependent upon who the host railroad is, and their progress toward putting in the most important and most difficult part of PTC, which is all the track-side sensors, antennas, and equipment, so that the train can signal its position and its speed and its location.

Mr. WEBER. OK. Well, let me—I have got half a minute left.

So are there going to be calculations—and I know this is really getting down in the weeds on two fronts—are there going to be calculations—if you have got a train carrying a lot of hazardous materials versus a train carrying people, are the reaction times increased for certain levels?

In other words, you hear about airplanes—I think somebody mentioned the airline industry—you hear about some planes that fly into mountains, and the voice saying “Pull up, pull up,” and they shut it off, thinking there is something wrong with it, and then they crash into a mountain. But is there something that is going to give—how much time—and does it vary for people and hazardous materials?

Mr. HAMBERGER. Yes, you have gotten into a very technical area, Mr. Weber——

Mr. WEBER. Right.

Mr. HAMBERGER [continuing]. Which we call braking algorithms. If you take a look at the highway, a Smartcar can stop a lot faster than an 80,000-pound truck. Similarly, an intermodal train, or a passenger train, can stop a lot faster than a 110-car, fully loaded grain—

Mr. WEBER. So you do give extra—

Mr. HAMBERGER. It has to be taken into account—

Mr. WEBER. Right.

Mr. HAMBERGER [continuing]. When calculating when do you have to hit the brakes—

Mr. WEBER. Got you.

Mr. HAMBERGER [continuing]. So that it will stop before it runs the red light.

Mr. WEBER. Yes, I got you. My time has expired. Thank you, Mr. Chairman.

Mr. FASO. The gentleman from New Jersey, Mr. Sires, recognized for 5 minutes.

Mr. SIRES. Thank you, Mr. Chairman. Thank you for holding this hearing. You know, I represent Hoboken, New Jersey, and we recently had the accident in Hoboken, New Jersey. It could have been prevented or could have helped if we had PTC. It was a miracle that only one person died, because if you had ever been to the station you realize how many people are there. Also, sleep apnea, if we had tested the engineer, it might have helped, because it was determined that was part of the problem.

But my question is to you, Mr. Reyes. New Jersey Transit used to be a great transit system. In the last few years it really has lost all its sass, you know, all its—so I was just wondering. You met with New Jersey Transit. And have they given you the fourth-quarter report on what they are doing with PTC?

Mr. REYES. They did give us—they are required to give us their updates, and it is annually, but they have been doing it quarterly, as all the other railroads have. We have the information, it was submitted before January 31st. That should be published soon on—

Mr. SIRES. What I really want to know is what progress have they made. I think I know.

Mr. REYES. Well, having—

Mr. SIRES. I just want to—

Mr. REYES. Having looked at the data, which is not yet released, I know they have made some progress.

Mr. SIRES. Yes, with PTC.

Mr. REYES. But—and with PTC. However, with the—

Mr. SIRES. You can say none, you know. It is OK.

Mr. REYES. No, there was some progress. But they also came in—more importantly—we met with these railroads for 2, 2½ hours, right, and New Jersey Transit being one of them. And I am very familiar with your system. I am a New Yorker.

Mr. SIRES. Now, do you expect them to ask for an extension?

Mr. REYES. They came in, they gave us a plan, they said they would be able to make the deadline for all the requirements by December 31, 2018. We are going to keep working with them and pushing them and whatever we have to do to get them the deadline—

Mr. SIRES. Yes, I know they have no money—

Mr. REYES. We are not going to give up on any railroad right now.

Mr. SIRES. I know they have no money, and they have very few loan options. But we provided \$68 million in rail safety improvement grants. The FRA has not issued a notice of availability for these grants. Do you intend to do that soon, or—

Mr. REYES. I believe you are referring to the CRISI [Consolidated Rail Infrastructure and Safety Improvements] grants.

Mr. SIRES. Yes, the CRISI—

Mr. REYES. Yes. So those were—those are being released today.

Mr. SIRES. Excuse me?

Mr. REYES. I believe those are being released today.

Mr. SIRES. Today?

Mr. REYES. I was informed before this meeting, yes. And so they will be available for PTC funding through the CRISI grant.

Mr. SIRES. Boy, I am glad we had this hearing, because I found out that we are being released today.

Mr. REYES. Well, we are working to help New Jersey Transit and all the commuter lines get to the deadline.

Mr. SIRES. And I guess I have a question regarding this technology, because I am not really all that well versed in technology. But you keep telling me that there is, like, two or three different types of technologies out there, and to coordinate this, in order for it to be able to work this—is there a possibility that in the future we can come to one technology, where everybody has the same technology? What is stopping us from doing that?

Mr. Tolman, maybe you want to answer that.

Mr. TOLMAN. Congressman, one issue is that, you know, they are talking about not having enough resources. But you know, in 1996 I was operating Amtrak on the Northeast Corridor with PTC. Now, that was a few years ago, I guess. It wasn't close enough, it wasn't the 50-year window. But, to me, you know, there is no reason this shouldn't be done. I mean I don't get it.

But Congressman, I would like to address—I know the accident in Hoboken was an extreme tragedy, and every accident—no accident should ever happen. And you know, sleep apnea was found to be a cause of two recent accidents.

But you know, the number one issue in the railroad industry, unsafe issue, is fatigue. And that encompasses everything around that that would have taken care of—if we addressed that with the Rail Safety Improvement Act in 2008, we would have addressed sleep apnea as a whole issue, whole part of the issue. It is a minor part of the fatigue issue. But I am going off on a tangent and I don't mean to.

Mr. SIRES. And Mr. Skoutelas, I am concerned about the public having the confidence to ride safely in the transit system, because it is very important in my district to get people off the roads. With all these accidents, do you think that the public is losing the—how can I say—the reliance on safety of the transit system?

Mr. SKOUTELAS. Well, look. I think all of us, as stated earlier, are committed to the utmost safety—safe system that we can possibly get. And as I mentioned a few moments ago, the commuter rail, passenger rail system, is a safe system.

Of course, when an accident happens, it is a tragic—it is tragedy. And we feel for the victims, and we know that we need to continue to work toward a safer system. I don't believe that the public necessarily feels that they are not, but we need, as professionals, to provide the very, very best service and safety that we possibly can.

Mr. SIRES. My time is up. Thank you very much, Chairman.

Mr. DENHAM [presiding]. Mr. Mast, you are recognized for 5 minutes.

Mr. MAST. Thank you, Chairman, for letting me join your subcommittee today. I want to thank you all for being here to discuss this very important rail safety issue of Positive Train Control.

In south Florida, where I represent, south Florida, the palm beaches, the Treasure Coast, nearly every single crossing that we have in our area is at grade, same level as the cars, as the walkers, as the bicyclers. We are very familiar with freight traffic, but we have also had commuter rail there, not at a high speed, known as the Tri-Rail that has been running there for years. But as of this January, just recently, we also now have the Brightline rail line, which is running at 70 to 110 miles per hour throughout this stretch.

In the Brightline's first week of operation alone, the first week, three people were struck. There have now—since then, since it began in January, there have been four fatalities since January, numerous non-fatal accidents, and there was just one more last night, which we are still gathering details on.

So Mr. Reyes, you are the chief counsel for the Federal Railroad Administration, whose mission is rail safety movement. Mr. Sumwalt, you are the Chairman of the National Transportation Safety Board. So I would like to know. Are the NTSB and the FRA, are they aware of these incidents?

Mr. REYES. Thank you, Congressman. This is an issue that we are very concerned about at FRA to make sure that people that are trespassing at grade crossings are aware—

Mr. MAST. So yes—

Mr. REYES [continuing]. Of the—

Mr. MAST [continuing]. You are aware of the incident?

Mr. REYES. We are absolutely aware, and—

Mr. MAST. Mr. Sumwalt, you are aware of the incidents?

Mr. SUMWALT. Yes, sir. We are.

Mr. MAST. Thank you very much. Does the Brightline currently implement PTC rail safety measures?

Mr. REYES. Yes, they are currently operating on PTC.

Mr. MAST. They are operating. And why—

Mr. REYES. Could I just check with my safety advisor? Because I know—it might be a different version than what we are talking about.

Mr. MAST. Please do so. We would love to know the exact fact.

Mr. REYES. Yes, it is called the ATC [Automatic Train Control] system, and—hang on a second.

[Pause.]

Mr. REYES. OK. So they do—they have a system called ATC, they are doing some testing, and then they will be fully implemented, as soon as the testing is finished. But it is currently on that system.

Mr. MAST. So is there currently an investigation as to why the ATC has not been effective in preventing—

Mr. REYES. Well, ATC or even full PTC would not be effective when people are crossing at grade crossings against the flashing lights and the gates being down, right? What PTC does do, it stops train-to-train collisions, it stops trains that are in overspeed situations—say they are going way too fast, 70 or 80 in a 30 zone. If there is a designated area where there is a work crew, PTC would be programmed to slow down or stop for that area. And also, if there is a misaligned switch.

However, with grade crossings, PTC is not programmed or mandated to address that situation. That type of situation could be improved by improving grade crossing, maybe moving them further away, or technology—there is new technology that we are researching at FRA that would issue an alert on cars or cell phones before they hit the grade crossing.

But the main thing that was really most helpful anywhere is awareness, and to let people know the dangers of crossing against—or trespassing onto track. We have invested—

Mr. MAST. Thank you, Mr. Reyes.

Mr. Anderson, you stated in your comments—

Mr. HAMBERGER. If I could just jump in, the current PTC—

Mr. MAST. Maybe in just a moment, if I have more time.

Mr. HAMBERGER. Yes, sir.

Mr. MAST. Mr. Anderson, you said, “Passenger rail must have a much higher standard.” You are the chairman of Amtrak, the CEO of Amtrak. You know about passenger rail. Does what I just mentioned to you about those incidents—all since January—seem like a higher standard to you? And do you believe that there is more of an impetus for safety with each mile per hour that we are going faster, 161 feet per second, 110 miles per hour?

Mr. ANDERSON. Actually, the data would show that the number one issue we have with rail safety across America is grade crossings. We have about 2,000 incidents a year in our country. And it is probably the single biggest issue in terms of safety of people. There are far more people that are hurt or injured or killed in grade crossings than anything else going on on railroads.

And I would note that, you know, the FRA administers a program every year for States, and we are investing about \$230 million a year in grade crossing grant programs through the FRA to States and local municipalities to rectify grade crossings to prevent these terrible accidents.

Mr. MAST. Thank you, Mr. Anderson.

Mr. ANDERSON. Thank you.

Mr. DENHAM. Mr. Mast, your time has expired.

Mr. Larsen, recognized for 5 minutes.

Mr. LARSEN. Thank you, Mr. Chairman. Mr. Chairman, I would like my statement in—submitted for the record.

Mr. DENHAM. Without objection.

[The statement of Congressman Rick Larsen is on pages 45–47.]

Mr. LARSEN. Thank you.

Mr. Sumwalt, I just wanted to go back to Washington State and the DuPont tragedy. Sound Transit reported that, you know, the

PTC system was online, was not operational at the time of the accident.

So I recognize the investigation is ongoing. Would you elaborate, though, on NTSB's latest findings regarding PTC in this particular instance?

Mr. SUMWALT. Congressman Larsen, thank you. As you pointed out, the investigation is ongoing. We are trying to untangle all of the aspects of that accident. There are no current updates available.

Mr. LARSEN. There are no current updates available?

Mr. SUMWALT. Yes, sir. That is correct.

Mr. LARSEN. All right, thank you.

Mr. Reyes, the DOT's proposed budget for 19 States or agencies will continue to target its resources at the most pressing safety challenges, including implementation of PTC. However, I just was wondering how you plan to meet those objectives with just half of the Federal funding that you have received previously.

Mr. REYES. The proposed budget does not significantly change our funding for our safety programs. There was a—in the budget there was a new look at funding for long-distance rail and Amtrak, so that is really where the money is coming from. But we are going to continue the same level or more of this—we have the same staff, we have the same programs, and we are going to continue making safety the number one priority at our agency.

Mr. LARSEN. I am glad to hear you want safety to be the number one priority, but I—you know, some—given the proposal, I guess I am scratching my head about whether you will be able to accomplish that.

And, Mr. Anderson, you notified the State—our State's department of transportation, Washington State, of your immediate, mid-, and long-term initiatives underway to ensure safety corridor of operations in the Amtrak Cascades Corridor. How will the administration's proposed 2019 budget impact your ability to execute those measures?

Mr. ANDERSON. Well, we haven't done an analysis specifically. But to be candid, if you take the normal Amtrak grant of about \$1.4 billion to \$1.7 billion, which is authorized under the FAST Act, and you cut it by about \$1 billion, it is tough. Now, we are not going to do anything unsafe, we will just stop operating. But the company has a challenge as a going concern if that happens.

Mr. LARSEN. Yes. I suppose it would be—we would have a 100-percent safety record if you didn't have to operate at all.

Mr. ANDERSON. Well, that is not a very good answer.

Mr. LARSEN. It isn't a good answer. And I know—I am just saying that you are stuck with this proposed budget that apparently cuts Amtrak, in order to fund FRA.

Mr. ANDERSON. Well, I don't want you to think we would do anything unsafe as a result of that. I mean in the airline industry we went through bankruptcy and a lot of things, but we never, ever compromised safety, and we won't.

But the bottom line is the proposed budget makes Amtrak viability very difficult, going forward. We are going to file our grant request tomorrow and ask for the full FAST Act funding, and Con-

gress has been very supportive of Amtrak, for which we are very appreciative.

Mr. LARSEN. Yes, thanks.

Mr. Reyes, on January 10th I joined several Members of Congress in sending a letter to Secretary Chao on requesting the status of Amtrak's action plan submission, and we have yet to receive a response from the Secretary. Do you have a status of the Department's review?

[The letter of January 10, 2018, to U.S. Department of Transportation Secretary Elaine L. Chao from Congressman Rick Larsen et al. is on pages 228–229.]

Mr. REYES. I would be more than happy to check with my staff to see what the status is of Amtrak's review. So please allow me time to get back to you.

Mr. LARSEN. That is fine, thank you.

Mr. Tolman, could you describe the role that your members are playing in the NTSB investigation, and the Amtrak Cascades 501 tragedy? I am just interested to hear how you guys play out that role.

Mr. TOLMAN. Yes, thank you. We have a—the BLEET and the SMART Transportation Union and any other issue that is in any other—like if it is a track issue, the maintenance of way is involved. Signal, if it is a signal accident. But we work side by side with the NTSB and have been doing that for over 20 years. We have a complete party status to the investigation and our duty is—as theirs is—to try to find out what happened, and how to fix it.

Mr. LARSEN. Yes, thank you.

Mr. TOLMAN. And prevent it.

Mr. LARSEN. And prevent it. Thank you, thank you.

My time is almost up, and I—Mr. Chairman, I just would like to note I will be submitting some QFRs, as well, and yield back. Thank you.

Mr. DENHAM. Thank you, Mr. Larsen. I now recognize myself for 5 minutes.

Mr. Sumwalt, first, specifically on the end-of-the-year deadline that we have before us, I have heard from railroads across the entire country about the relationship between a host and tenant railroads, and how they will be treated at the end of the year. In some cases—in my district, for example—we have, in the valley, an ACE train as well as Amtrak on the San Joaquins. Both of it run on both the UP line and Caltrain track. And in some cases across the entire country, you are going to have the host that is fully implemented with PTC, but the tenant railroad not, or vice versa.

So, in those cases, Mr. Reyes, how is FRA going to treat those cases at the end of the year when it comes to fines or extensions, if they apply?

Mr. REYES. OK, thank you for your question, Congressman. At this point we have met with 41 railroads in the past 45 days at the express instruction of Secretary Chao. We are working with every single railroad so that they can meet all of the requirements for the December 31, 2018, deadline. They need to install 100 percent of their hardware, purchase all their spectrum, do employee training, as well as have revenue service demonstration.

We are not ready to give up on any railroad at this time. We are going to work with them by providing them frequent technical assistance. We are going to—

Mr. DENHAM. I understand the company line, right? I get it. We all want to have them fully up and implemented. This is a great, great technology. But, as we have seen, there are some that have put PTC in place very quickly, they have done the expense. There are others that haven't even started. So if they haven't even started to this point, we are well aware that there are some that will never get there by the end of the year.

And the question is are we going to penalize the host, who may be fully implemented, or the tenant in either one of those cases? Or vice versa. Depending on who is ready and who is not, who do we fine and who do we get extensions to?

Mr. REYES. Congressman, we are ready to use anything that we can to push these railroads to comply with the December 31st deadline. We are meeting with them, we are giving them technical advice. We are going to do everything possible. We are not ready to give up on them. No one has come in and asked for an extension. They have all—

Mr. DENHAM. And that is the problem. I think that is the problem both the ranking member and I have, is the—we are well aware of some that are far behind or not even started, and they have not asked for an extension, nor have they asked for grants. They are only waiting to see the deadline get there.

So let me ask you this, Mr. Reyes. What are FRA's plans and schedule to provide guidance for host and tenant railroads? When will we have your guidance out for them?

Mr. REYES. Well, right now, all the railroads are required to submit their plans for implementation of PTC. We will be reviewing those plans. And if we have comments on them, we will issue comments on the plans that they submit.

Mr. DENHAM. Thank you. And my time is limited on this round, but I do want to get one thing out there.

Mr. DeFazio and Mr. Capuano have a bill, H.R. 4766. I agree with the premise of the bill. I agree that the final deadline should be 2018. This has gone on for 10 years now. It ought to be very obvious what needs to be done and how this should be implemented.

The question that I have, again, there are so many different entities out there that either have not filed for an extension, they have not made it aware to us where they are at in the timeline, or, three, they have not come and asked for grants. There are a number of railroads that I have reached out to and said, "What do you need? Let me help you get to this grant process." And they have told us, "Nope, we are fine."

So I think we are in a real quandary here, you know, on the ranking member's bill. I do have concern and question about the \$2.5 billion in new grant programs, when there is \$31 billion out there available today. The last bill we did, we allowed RRIF loans to be used for PTC, which Amtrak should have utilized in a greater fashion, and others.

There are a lot of opportunities out there for grant programs that should be utilized, and some that have utilized grant programs but

failed to implement. So there are a number of other questions, and I will address some of this in my closing. But I have to just say that I do agree with the ranking member of the full committee and ranking member of this subcommittee, that this 2018 deadline is a real deadline and one we have got to address.

Safety is first in all of our transportation. But as of late there have been way too many accidents, and we can do better.

I yield back. I now recognize Mr. Capuano for 5 minutes.

Mr. CAPUANO. Wow. And people thought bipartisanship was dead.

[Laughter.]

Mr. CAPUANO. It is not. This is a classic example. The chairman and I have talked many times about this. We are on the same page. You know, we are trying to be reasonable. That is why the extension went to 2018. Unreasonable people would have said, well, 2015, which was impossible. But 2018 is real.

And I will tell you there is not a single person on this side of the table that is going to sit here and quietly just accept the next accident after that deadline. The blame for that will be laid on the people who deserve the blame, people who are not doing their job.

Mr. Sumwalt, I want to publicly thank you and your agency for keeping the fire on this issue for so many years. I know it is not pleasant, I know you don't enjoy it, I know there are other things you would like to get to, and I just want to express our appreciation of—the NTSB has been, in my opinion, one of the best agencies we have. You do a great job on every aspect. And this kind of a thing, doing it professionally and consistently, is really—I think really been helpful.

I do want to specifically talk about interoperability. I get it. But I have an iPhone, my wife has a Samsung, we can still talk to each other. We can see each other if we want to. Interoperability may not be easy for a person like me, who can barely turn this thing on, but there are plenty of 15-year-old kids in this country who can do whatever is needed to get it interoperable. So, though I am sure it is a bump in the road, it is a small one.

Mr. Reyes, I would like to ask the FRA. When it comes to interoperability, I really appreciate the fact the FRA is sticking to their guns at the moment. I appreciate the money that you have put out there to try to help people do this. I assume there will be more, if necessary.

But at the same time, I also see the FRA as having a particularly important role in requiring certain interoperability. You can't just say do it, here is the money, and go ahead. Somebody has to be responsible to make sure that one system talks to another. And my hope is that the FRA—not my hope, my expectation is the FRA is that agency. And I am hoping that that is your role.

Mr. REYES. Well, absolutely. We oversee the railroads. And one of the requirements of full implementation is interoperability. You know, the PTC system must be completely interoperable between all the railroads in order to have a safe system.

We are reviewing the safety plans. That is a requirement. We are pushing all the railroads to not only just have the PTC system up for themselves, but to have complete interoperability.

Mr. CAPUANO. I appreciate—

Mr. REYES. That is something that we—

Mr. CAPUANO. I appreciate that. And I knew the answer, but I needed it to go on the record. And I appreciate that very much.

Mr. REYES. OK, thank you.

Mr. CAPUANO. I would like to ask Mr. Hamberger, Mr. Anderson, and Mr. Skoutelas a simple question.

Mr. Anderson, I think your initial testimony was pretty clear, but I want to draw a big, bold line under it. As we have heard—and again, more for the audience; everybody here knows this, but maybe there is some people at home that don't understand—PTC is a technology that requires hardware and software both on the track and in the railcars, in the engines. So you can't have one without the other. And trains of all—operate on somebody else's track. You all do it, it is all done, and the average person may not know that. They may think you own the track, or maybe they think the Government owns all track. So, therefore, that is what the interoperability is all about.

But there is also—I am a—well, I was a lawyer. I am a recovering lawyer. I am practicing politics, I guess. I don't know which is worse, but that—somebody else can decide that.

[Laughter.]

Mr. CAPUANO. But as a recovering attorney, one of the things I used to worry about with my clients was liability. If my client had done nothing wrong, they had done the right thing, they were probably not liable for any actions that might happen.

In the future, in the very near future, there will be situations where, for the sake of discussion, a stretch of track has perfectly good, working PTC, yet somebody else using it does not have PTC on their engines, or vice versa, or whatever it might be. And all three of your groups and agencies have that situation. None of you run exclusively on your own track with exclusively your own trains.

I am hoping and wondering—have you spoken to either your attorneys or your insurers as to what will happen come January of next year if you have done what you are supposed to do on your track, and somebody else wants to run a train that has not done anything?

We will just start with you, Mr. Hamberger, and then we will go right down the line.

Mr. HAMBERGER. Not surprisingly, having been before this subcommittee before, the chairman and the ranking member have put their finger on what is, in fact, the biggest policy issue surrounding, as opposed to the technical issue, of interoperability.

And one of the things that I was pleased to see in Mr. Reyes's testimony—on page 5, as a matter of fact, he talks about having all of the options on the table when it comes to how to implement the 2015 act, which was designed—

Mr. CAPUANO. I don't mean—I know you are trying to give me a complete answer. Unfortunately, time doesn't let it. Will you allow other people to use your tracks if you have done your job and they have not?

Mr. HAMBERGER. The answer is somewhat buried in the question of what the FRA is going to say too, in response to the chairman's question of what will the guidance be coming out of FRA. If our members feel that they can continue—you know, if PTC isn't there.

We don't have PTC today—it is still a safe operation. We are a safe operation.

Mr. CAPUANO. Yes, yes, I get that.

Mr. HAMBERGER. So the question then is, you know, from a legal liability standpoint, for the lawyers to take a look at it. But the policy question is can you shut down commerce, can you shut down—

Mr. CAPUANO. Well, I don't mean to be—

Mr. HAMBERGER [continuing]. 2 million people a day—

Mr. CAPUANO [continuing]. Disrespectful, but it is not a policy question.

If I were advising you as an attorney, I would say you are nuts to stick your neck out on the line when you have done the right thing and somebody else hasn't. But that would be me talking to you as an attorney. And if you don't listen to your attorneys, maybe you better listen to your insurers.

Mr. HAMBERGER. I am sure those discussions are ongoing, sir. Yes, sir.

Mr. ANDERSON. Well, I think—

Mr. DENHAM. A very quick response from each, please.

Mr. ANDERSON. Yes, sir. It is going to be very difficult for us to allow anybody to operate on the railroad we host without PTC.

Mr. DENHAM. Thank you.

Mr. SKOUTELAS. You know, FRA guidance has been mentioned. And, quite frankly, the various entities have worked very well together in terms of exchanging information, and I would hope that there would be continuing dialogue around these very critical issues, so these final judgments can be made, and the proper guidance can be issued.

Mr. DENHAM. Thank you. The gentleman's time has expired. Mr. Smucker is recognized for 5 minutes.

Mr. SMUCKER. Thank you, Mr. Chairman. A question for Mr. Anderson.

We have—been a lot of talk around PTC and major accidents in Philadelphia and Washington, which were somewhat similar—at least in your findings there were some similarities. Both were PTC preventable, but likely could have also been prevented with better training of the crewmembers and engineers.

And so I would like to hear what your response has been in regards to the training of your employees after those accidents.

Mr. ANDERSON. A very good point. I mean I do have to emphasize that while training and professionalism are very important, you really do have to have fail-safe systems like PTC. We learned that in aviation. Because when you leave it to a single person to remember everything about a route, no matter how well qualified, sometimes you are going to have human error.

With that said, we are standing up an aviation SMS system today at Amtrak and making whatever investments are necessary in standards training. We need to move to full simulation, instead of training people out on the railroad to move to the aviation model and to basically operate the way an airline operates, with a standardized quality assurance training and standards organization.

A lot of progress has been made since train 188, a lot of investment has been made in centralized training and bringing the right

resources onboard. But we obviously owe you and owe our customers a much better result.

Mr. SMUCKER. Thank you. Another question for you, Mr. Anderson. I would like to understand the legal impact of an accident similar to the one which just recently occurred, in terms of liability. And there was an AP article recently that I think you are probably aware of, where a previous Amtrak executive was quoted as talking about no fault contracts.

And, of course, Amtrak—you enter into contracts with the freight railroads to use their line. And the premise of this article is that there is—all the liability comes back to Amtrak, which, of course, is a publicly financed railroad. And again, the premise was there are—that does not potentially provide—in fact, I will quote a quote from the article. “The freight railroads”—I am not passing judgment here, I am saying what was quoted—“The freight railroads don’t have an iron in the fire when it comes to making the safety improvements necessary to protect members of the public as a result of the contracts.”

So, who is liable?

Mr. ANDERSON. Amtrak is both a host itself, in the corridor, but it also operates on host railroads. And there has been a long and time-honored practice in the railroad industry since—one of the Members mentioned every railroad operates on someone else’s railroad at some point in the course of a journey. And there has to be an apportionment of responsibility. And that apportionment is the user of the railroad indemnifies the host.

So, when Amtrak has users of its railroad in the corridor, we are fully indemnified. And when we operate on other hosts, we indemnify those hosts. And I think it has been that way in the railroad industry for 100 years.

Now, I will note, just from a taxpayer standpoint, we carry general indemnity insurance. We have a \$20 million deductible. The rest is covered with a normal sort of Lloyd’s slip. So we have plenty of insurance. And then we have a statutory cap on damages.

Mr. SMUCKER. Let me just drill in, because I only have 1 minute left. So can you specifically address the South Carolina incident, where it—you know, at least the quote from Amtrak—I don’t know if it was from you—was that it was the fault of a switch that had been improperly—I don’t know what the term is for that—but who will be liable in a case like that?

Mr. ANDERSON. I would have to check and get back to you on the agreements. But essentially, we will be responsible for everyone on the train, and our train. So we will be responsible for all of the Amtrak-related train, passengers, and employees. And the host railroad will be responsible for theirs. But I have to defer to Bob on the cause of the—

Mr. SMUCKER. And I am sorry, I am out of time.

Mr. ANDERSON. OK.

Mr. SMUCKER. Is this something that you would be willing to provide some additional information to—

Mr. ANDERSON. Sure.

Mr. SMUCKER [continuing]. Perhaps to the chair of the committee? I would be interested—

Mr. ANDERSON. I no longer have a valid law license, so I should do it in writing.

Mr. SMUCKER. Yes, thank you.

Mr. DENHAM. Thank you, Mr. Smucker. I now recognize Mrs. Napolitano for 5 minutes.

Mrs. NAPOLITANO. Thank you, Chairman Denham and Ranking Member Capuano, and thank you for holding the hearing. I am proud to be back on this subcommittee, and I am glad that my first year is back on this important issue of Positive Train Control, one of my favorite things.

My district is home to major freight and railroad of Union Pacific and BNSF, long-distance passenger rail of Amtrak, and the busiest corridor on Metrolink's commuter rail system. In many instances, these railroads operate on the same track. Metrolink is 100 percent PTC implemented on the rights of way in southern California, and I hope their freight partners and Amtrak will be fully interoperable by the deadline.

But my first question is to Mr. Hamberger. What is the status of BNSF and Union Pacific's implementation of PTC in southern California, and will your companies have full implementation in southern California by the deadline?

Mr. HAMBERGER. Thank you, Congresswoman, and great to have you back on the subcommittee.

The BNSF and Union Pacific are, in fact, fully implemented on their own lines in southern California. BNSF has completed its interoperability testing with Metrolink, and they are operating today under PTC. Union Pacific is in interoperability testing with Metrolink, as we speak, and hope to complete that, and then move to PTC operation, certainly by the end of the year, hopefully before that. And UP and BNSF are in interoperability testing between themselves in southern California as well, and hope to have that completed. As for Amtrak, I don't know where they are.

Mr. ANDERSON. Amtrak will be in compliance by year end.

Mrs. NAPOLITANO. Great.

Mr. ANDERSON. And we actually provide the T&E crews on Metrolink.

Mrs. NAPOLITANO. Well, the next question is for Mr. Anderson.

What is the status of Amtrak's implementation of PTC on all corridors that you operate on in southern California? Will you have full implementation in southern California on all rights of way that you use by the deadline? If not, what is the schedule for implementation there?

Mr. ANDERSON. We will be fully implemented by the deadline.

Mrs. NAPOLITANO. For sure?

Mr. ANDERSON. Yes.

Mrs. NAPOLITANO. OK. Mr. Anderson, excuse me, you have repeatedly said that you will not allow a non-PTC train to operate on your right of way. The concern in southern California is that Amtrak will not be in compliance for local freight—and freight right of way. How are you addressing this concern?

Mr. ANDERSON. Could you repeat the question?

Mrs. NAPOLITANO. You have said that you will not allow a non-PTC train to operate on your right of way. The concern is that Amtrak will not be in compliance on local and freight right of way.

Mr. ANDERSON. The same answer as your earlier question. We will be in compliance by the deadline.

Mrs. NAPOLITANO. You will be?

Mr. ANDERSON. Yes.

Mrs. NAPOLITANO. A question for Mr. Tolman. I have a concern with the long trains, Mr. Tolman, and the ability of the trains to stop effectively. Will this affect long trains in any way?

Mr. TOLMAN. You know, it is a great question, because it is a concern that continues to increase. Trains now are—average somewhere around 2 to 3 miles. The longer the train, the more difficult it is to control.

You know, God forbid we—as one of the congressmen mentioned about public grade crossings, if something goes wrong at a public grade crossing—which there are thousands every year, an average of three deaths every day in the United States—that all comes into play. If a 2- or 3-mile train is involved in a collision with an automobile or whatever, it is going to delay anybody that wants to get through a public crossing.

We have expressed this to the FRA. The FRA is concerned, as we are. And it is a major issue that we need to address, sooner than later, before, you know, something seriously goes wrong.

Mrs. NAPOLITANO. Mr. Sumwalt, the issue of the length of the train and safety with PTC.

Mr. SUMWALT. Yes, ma'am. We do not have a position on the length of trains.

Mrs. NAPOLITANO. Are you considering looking at it?

Mr. SUMWALT. No, ma'am. We investigate accidents. If we find a problem as a result of one of our accidents, then we will address it.

Mr. REYES. Actually, FRA is—we are concerned about this issue. Currently GAO is studying this issue, and we are awaiting the results. So we are watching this issue. This is actually not an issue that directly relates to PTC. The——

Mrs. NAPOLITANO. Indirectly?

Mr. REYES. Directly. It is more of a blocked grade crossing type of an issue.

Mrs. NAPOLITANO. Well, would you advise this committee of any of the findings, so we may have the information?

Mr. REYES. It would be my pleasure.

Mrs. NAPOLITANO. Thank you, Mr. Chair.

Mr. TOLMAN. Mrs. Napolitano, if I may, there is no regulation currently on the length of a train, and there needs to be. That would address the issue.

Mr. HAMBERGER. Since we are extending this discussion, let me jump in here. The fact of the matter is there are no data on the relationship between safety and length of train. Your question, how does it interact with PTC, that would go back to the issue of what is a braking algorithm. And that is taking into account whether it is a short passenger train, a fully loaded grain train, or a longer freight train, so there is no impact on the ability of that train to stop before it runs the red light, no matter how long it is.

Mrs. NAPOLITANO. Thank you.

Mr. DENHAM. The gentlelady yields back.

Mr. HAMBERGER. I would also just point out—it is so unlike Mr. Tolman to get his facts wrong—there are not three deaths a day at grade crossings. There are 300 grade crossing deaths a year, which is 300 too many.

Unfortunately, the biggest safety problem we have is what we call trespassers. It is people who are cutting across to get to their favorite fishing hole or are not even at the grade crossing. And our studies with the American Association of Suicidology indicate that as many as 40 to 50 percent of those are suicides. But it is a combination challenge of not just grade crossings, but grade crossings and what we call trespassing deaths.

Mr. DENHAM. Thank you, Mr. Hamberger.

Votes have been called. If there are Members that have questions or comments to submit for the record, we would recognize those at this time.

Mr. Babin?

Dr. BABIN. Yes, sir, Mr. Chairman. Thank you very much. I know votes have been called. My questions were regarding these cybersecurity issues in regards to Positive Train Control.

And there is an article that was published last November in the Wall Street Journal entitled, “Surveillance Cameras Made by China are Hanging All Over the United States.” And without—I ask unanimous consent, Mr. Chairman, to enter this said article into the record.

Mr. DENHAM. Without objection.

[The Wall Street Journal article entitled, “Surveillance Cameras Made by China are Hanging All Over the United States” is on pages 230–238.]

Mr. HAMBERGER. Would that be a question for the record? Because I would sure like to be able to respond to that in writing for the record, if that is OK.

Dr. BABIN. Absolutely. Are you familiar with that?

Mr. HAMBERGER. Yes, I am familiar with cybersecurity and PTC. Yes, sir.

Dr. BABIN. OK. Well, these cameras hanging—if you ever read this article, it is quite chilling.

Mr. REYES. And we do have our security standards that we review, and the plans. So we would be happy to respond to that, as well, at FRA.

Dr. BABIN. OK. That would be great. Thank you.

Thank you, Mr. Chairman.

Mr. DENHAM. Thank you, Mr. Babin. Question submitted for the record.

Mr. Maloney, you are recognized.

Mr. MALONEY. Thank you, Mr. Chairman. And I particularly appreciate the reference you made earlier to the Commuter Rail Passenger Safety Act, which makes clear that RRIF funding—\$30 billion of it is available to commuter railroads.

So my question is, Mr. Reyes, did you say earlier that New Jersey Transit is going to meet the 2018 deadline?

Mr. REYES. We have met with New Jersey Transit, as we have met with all the other commuter railroads in the country. We were informed by New Jersey Transit that they believe they can meet the December 31, 2018, deadline. However—

Mr. MALONEY. You mean——

Mr. REYES. Although we——

Mr. MALONEY [continuing]. Are extending that deadline, or the deadline?

Mr. REYES. No, the deadline that is required——

Mr. MALONEY. Have they accessed the RRIF financing? I don't believe they have, have they?

Mr. REYES. I am sorry——

Mr. MALONEY. Has New Jersey Transit accessed any Railroad Rehabilitation and Improvement Financing to accomplish PTC implementation? And, if not, how are they going to do it?

Mr. REYES. I believe New Jersey Transit has applied and obtained funds. I could get back to you on the exact amount. I have a breakdown of some of the other railroads, but not particular to New Jersey Transit.

Mr. MALONEY. On those other railroads—because my time is limited because votes have been called—what is the status of Long Island Rail Road and Metro-North? They did access—MTA did access \$1 billion of RRIF financing.

Mr. REYES. Right.

Mr. MALONEY. What is the story there?

Mr. REYES. So—OK. So MTA, which is Long Island Rail Road and Metro-North, they applied for and obtained a RRIF loan of \$967 million. They are working diligently on—and they did come in also, as New Jersey Transit came in—they have not stated that they—they have not asked for any extension.

The railroads, especially commuters, we are having them come back in, even though we saw them in the first place because we were working with them every month—I mean sometimes we have two and three railroads come in a day for hours of—for meetings of 2 hours or more, and we are trying to push them to——

Mr. MALONEY. Mr. Reyes, are they going to meet the deadline or not?

Mr. REYES. This is February of 2018. Right now, we—they have presented a plan that they say they will be able to make the deadline——

Mr. MALONEY. Do you believe that plan?

Mr. REYES. I am working with them. I am not willing to give up on any railroad, and we will push them to meet the deadlines.

Mr. MALONEY. You are not willing to give up on them. Does that mean you think they are going to meet the deadline, or not?

Mr. REYES. All the railroads that have come in to meet with us have told us they are looking to meet the deadline.

Mr. MALONEY. Right.

Mr. REYES. We are going to work with them and do everything possible——

Mr. MALONEY. Right. Next time you have one of those meetings, you should mention the name Jimmy Lovell. He was a guy who got killed near Spuyten Duyvil on December 1, 2013. He got on the train in Cold Spring, New York, that morning to go work on the lighting at the Rockefeller Center Christmas tree. I know that because his wife works for me for years. His kids, Jack and Hudson and Finn, go to school with my kids. He doesn't come home any more because that preventable accident happened that day.

And that was 4½ years ago, and we are 10 years into this, and we have provided the financing. That is why we take this seriously, because we represent people who are losing their lives, 300 deaths in the last few decades. Right? Thirty—what, 6,800 injuries.

And so, sir, it is your job to make sure these railroads meet these deadlines. We have provided the financing. We have provided grants. So we are watching this really closely. But we are counting on you not to not give up on them, but to hold their feet to the fire. Do you understand why we are a little impatient on this?

Mr. REYES. In 2017 was the first year that fines were assessed against the railroads. That was a shot across the bow to the railroads to tell them we are serious and we want them and we are going to push them to get this implemented. And that is why Secretary Chao, on December 27, 2017, issued a letter saying that we are very serious about this, and this is something that needs to happen. And that is why we have met with every single railroad—41 railroads in 45 days—to tell them this is something that needs to happen now.

Mr. MALONEY. I appreciate your diligence on that.

In the time I have left, the subject of grade crossing accidents came up. It is particularly interesting to me that we don't use—that there is no conversation of motion-activated cameras or sensors at grade crossings, particularly in the conversation of PTC. As important as PTC is, right, you know, it is not going to do anything about a grade crossing accident if there is an object on the tracks. My Republican colleagues went through a horrific accident just a few days ago, an example of where you got a vehicle on the tracks.

Is there any conversation about why we don't use inexpensive motion-activated camera technology? I mean, my God, operators of trains could have an app on their phone. You can look at the weather on most high schools in America and see the camera. It is a free app. You can access it on your phone. The cameras are inexpensive.

Why on earth wouldn't we maybe, in conjunction with weather stations, have simple digital camera technology, maybe linked to motion detection—which, by the way, you can put in your home for 100 bucks, or a ring—you know, door bell—why wouldn't we give operators the ability to, on their own phones, access that video, as a way to see what is ahead of them on the tracks, so they can stop in time? Has anybody talked about that? Maybe Mr. Skoutelas?

Mr. DENHAM. I would ask for a quick response.

Mr. SKOUTELAS. I am sorry. I have not heard that discussion at all. I mean the typical protection is a four-way crossing gates to try to avert that kind of damage and accident. But what you are describing, it—no, I am not familiar with that.

Mr. MALONEY. Thank you, Mr. Chairman.

Mr. DENHAM. Thank you, Mr. Maloney. Obviously, there are a number of other questions left on both sides of the aisle on this. As you can see, there is a great deal of frustration about the current implementation, as well as—I would say the thing that is more concerning is not just where we are at on implementing, but the question arises on where each different host, as well as each different tenant rail, is on the requests.

If you have a timeline, we want to see that timeline. If you have questions or concerns or impediments, we want to know what those are. If you have not received funding, maybe you should request funding. But certainly ignoring a congressional mandate again won't be tolerated by either side of the aisle.

Mr. Anderson, I am not going to hold you accountable to your predecessor's comments, but I will just tell you. When we visited the train crash in Philadelphia there was a promise in 2015 that year would be 100 percent implemented on the Northeast Corridor. Not only did Mr. Boardman commit to that, but Mr. Moorman committed to that. So the previous two CEOs committed in 2015 that it was going to be implemented. Today, in 2018, it is still not 100 percent compliant.

So I would like to see a timeline, not only from Amtrak's perspective on a national level, but certainly on the Northeast Corridor, where your predecessors have committed.

Secondly, you know, as I stated before, I am in alignment with Mr. DeFazio and Mr. Capuano on their bill, as well, at least on the implementation piece of this. I have concerns on the grants, because we have so much grant money available right now that has not been requested. But specifically, Massachusetts Bay Transportation Authority has already received \$400 million specifically for PTC. Illinois DOT was awarded \$234 million, New York Metro received \$973 million, both specifically for PTC.

I think the American public is tired of excuses. This is an amazing technology that will continue to improve the safety of our rails across the country. But we would expect better communication on what the needs are before we come up against another deadline.

Let me just say in closing, you know, our hearing today focused on the implementation of Positive Train Control across the entire United States. It is an important issue, lifesaving technology. And we understand that it is very complex. We want to get it done quickly. We want to get it done by this deadline. But we also want to get it done right.

I know that safety in the rail industry is top of mind with the recent three accidents that we just saw, deadly accidents. In addition to my district over the weekend we saw a 32-car derailment that happened in Hughson, California. You know, I want to echo the condolences on each of these different accidents, not only this year, but over the last several years. There have been too many deaths. And PTC could have prevented a number of them. It is not going to solve all of our challenges, but as all in the industry have agreed, it moves our industry forward to the next level.

I would just ask before I close out the hearing, Mr. Capuano, if you have any closing statements.

Mr. CAPUANO. Mr. Chairman, I did, but you just expressed them all perfectly, and I would simply associate myself with every word you just said. Thank you, Mr. Chairman.

Mr. DENHAM. Thank you, Mr. Capuano.

I ask unanimous consent that the record of today's hearing remain open until such time as our witnesses have provided answers to any questions that may be submitted to them in writing, and unanimous consent that the record remain open for 15 days for ad-

ditional comments and information submitted by Members or witnesses to be included in the record of today's hearing.

Without objection, so ordered.

I would like to thank our witnesses again for their testimony today. And if no Members have anything else to add, the subcommittee stands adjourned.

[Whereupon, at 11:33 a.m., the subcommittee was adjourned.]

STATEMENT OF
THE HONORABLE PETER DEFazio
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
FULL COMMITTEE HEARING ON
“OVERSIGHT OF POSITIVE TRAIN CONTROL IMPLEMENTATION IN THE UNITED STATES”
FEBRUARY 15, 2018

In 2005, a Norfolk Southern freight train transporting chlorine in Graniteville, South Carolina, was diverted onto an adjacent track where it hit a parked train near a textile manufacturing plant. Chlorine gas engulfed the area. Nine people were killed, including six workers at the plant and a nearby resident. More than 500 people were injured; 5,400 others within a one-mile radius of the derailment site were evacuated for days. The accident was preventable with Positive Train Control (PTC) and this Committee held a hearing on it in 2007, just prior to passing a bipartisan bill to mandate PTC implementation.

The Graniteville accident is eerily similar to the one that just occurred in Cayce, South Carolina. The switch was left in the wrong position. The Amtrak train was diverted onto the wrong track, and hit a parked CSX freight train, killing the two Amtrak crewmembers and injuring dozens of others. In both cases, there were no signals indicating the switch position or instructing the train crew to take certain actions. The National Transportation Safety Board (NTSB) confirmed once again that it was preventable—with PTC.

So was the Amtrak accident in DuPont, Washington, on December 18, 2017. It was the inaugural run on a new route, and PTC should have been installed and made fully operational before the first train departed the station. That's why, shortly thereafter, I introduced legislation (H.R. 4677) that would prevent new commuter or intercity passenger rail service unless PTC is up and running.

What happened in DuPont is not new. The train entered a 30 miles-per-hour (mph) curve going 80 mph. The 2015 Amtrak accident in Philadelphia: 106 mph into a 50-mph curve. The 2013 Metro North accident in the Bronx: 80 mph into a 30-mph curve.

For 50 years—50 years—the NTSB has issued one recommendation after another for the Federal Railroad Administration (FRA) to require and the railroads to implement PTC. Those recommendations fell on deaf ears so Congress took action. Over those 50 years, the NTSB has investigated 153 accidents that were preventable with PTC. These accidents resulted in 301 fatalities and more than 6,700 injuries. PTC remains on the NTSB's Most Wanted List of Safety Improvements.

The last hearing we had on PTC was in 2015. It has been three years and far too long since we checked in on the railroads' progress toward implementing PTC. We should not have to wait to hold a hearing until tragedies occur. The last rail safety hearing to cover more than PTC was in

2014, yet we have a rail safety law that goes back to 2008 that the FRA has not fully implemented.

Today, I hope we will hear reports of the great progress that the railroads have made on PTC.

Inevitably, when we have a hearing like this, some Member or witness will talk at length about the costs of new safety technologies and the limited amount of time that the industry has had to implement it. What we do not talk enough about is the human cost, the lives that were lost, and the families who faced Valentine's Day yesterday without their loved ones.

Without a doubt, some freight and commuter railroads embraced PTC early on and have made tremendous progress in implementing it. I want to congratulate all of those who will meet the December 31, 2018 deadline for their hard work.

Other railroads are close. Some are not as far along, while others have barely made any progress. In fact, some of the commuter railroads are so far behind that they may not even qualify for an extension to 2020 because they have failed to meet the basic requirements for an extension in the law. I think they should be held accountable with fines and penalties.

When I agreed to a possible extension beyond the 2018 deadline, I made clear that it was intended for a few railroads that could not make it, not everyone. Yet, now it seems that almost everyone will be asking for that extension. Some commuter railroads have even inquired about whether there is an appetite to extend PTC beyond 2020. Let me be very clear: No. We are not extending PTC again. Lives are at stake.

PTC is complex. I recognize that. But you have not had only 10 years to implement it; you've had decades. The NTSB's first recommendation was issued in 1969, the same year Neil Armstrong took his small step on the moon and eight years after President Kennedy issued the challenge to land a man on the moon, "returning him safely to the earth."

In that same time period, the aviation industry has embraced numerous safety technologies, including traffic collision avoidance systems. We have drones inspecting railroad track and bridges, and we are on the verge of cars and trucks driving themselves. Certainly, we can implement PTC.

If you need us to help with funding or anything else, now is the time to have that discussion. I introduced H.R. 4677, which provides \$2.6 billion in grants to commuter railroads and Amtrak to help implement PTC. If we move an infrastructure plan, that should be part of it.

On December 28, 2017, I sent a letter to Secretary Chao urging the Administration to include grant funding in their Infrastructure Plan. The letter also raised concerns about the railroads' lack of progress in implementing PTC. The response was: "Safety is the highest priority for the Department of Transportation."

Given this priority, I would love to know how the Department justifies its FY 2019 budget that cuts funding for the FRA's oversight and enforcement of PTC by 50 percent (\$6 million down to \$3 million). I wish I could say that is the only area they are cutting. The FRA's safety and operations account was cut by 30 percent. That includes a 37 percent cut to the automated track inspection program, which seems shortsighted given that track defects are the second leading cause of all train accidents. A crude-by-rail accident occurred not too long ago near the Columbia River Gorge and the cause was a track defect. These cuts are dangerous and I intend to fight them.

With that, I would like to thank the witnesses for being here today. I look forward to hearing their testimony.

**Statement for the Record
Congressman Rick Larsen**

**Transportation & Infrastructure Committee
Railroads, Pipelines, and Hazardous Materials Subcommittee Hearing
February 15, 2018**

- I would like to begin by thanking Chairman Denham and Ranking Member Capuano for allowing me to be here today and for calling this important hearing to take a closer look at the implementation of positive train control (PTC) nationwide.
- PTC is an invaluable communications and signaling safety mechanism, designed to prevent high-speed derailments, collisions, and other hazardous rail incursions.
- I, along with my colleagues on the Washington delegation, have seen the devastation that can result when the appropriate rail safety measures, such as PTC, are not fully operational.
- Last December, the Amtrak Cascades 501 train was on its inaugural trip from Seattle to Portland when it derailed near DuPont, Washington. The derailment claimed three lives and injured 62 passengers and crewmembers onboard.
- My thoughts and prayers remain with those impacted by this tragedy, and once again, we recognize the brave first responders for their tireless efforts and the Washingtonians who volunteered to help the victims' families.
- Our constituents deserve answers on what went wrong in cases like Amtrak Cascades 501, and what can be done to prevent these tragedies. This derailment and the more recent incidents in South Carolina and Virginia were preventable. They should serve as a wakeup call for Congress to move quickly to ensure that trains are running safely.
- Now is the time to bolster federal investments in our transit systems and working with industry experts and the administration to ensure PTC and other rail safety standards are met.

- A decade ago, Congress enacted the *Rail Safety Improvement Act of 2008*, mandating PTC on passenger rail service and freight traffic carrying toxic or hazardous materials by December 31, 2015. A decade later, this deadline has still not been met.
- After commuter and freight railroads raised concerns about their ability to comply with this requirement, Congress extended the deadline by three years to December 2018.
- While I appreciate that some railroads have already met the objectives of their PTC implementation plans and are committed to meeting this year's deadline, clearly others have not made similar progress.
- In light of recent accidents, implementing fully-operational PTC technology in our nation's rail system must be a top priority of this Committee, the administration and stakeholders. We cannot allow another year to go by without this life-saving safety tool.
- That is why I am proud to join my colleagues Ranking Member DeFazio along with Representatives Maloney, DelBene, Heck, Jayapal, Kilmer and Smith to introduce the *Positive Train Control Implementation and Financing Act* (H.R. 4766). This vital legislation encourages higher rail safety standards and provides the federal resources necessary to help railroad companies implement PTC.
- Specifically, the bill provides \$2.5 billion in grants to commuter and intercity passenger railroads for PTC implementation. It would also prohibit these railroads from beginning new service on routes unless this technology is fully-operational.
- Furthermore, the *PTC Implementation and Financing Act* requires Amtrak to report its progress on PTC implementation on routes that are not owned by Amtrak, but are operated by the railroad; for example, on the Amtrak Cascades line.

- There is more work to do to ensure that communities in the Pacific Northwest and nationwide are as secure as possible. That includes improving infrastructure to foster the safe and efficient travel of our constituents across all modes of transportation.
- In closing, I look forward to working with today's witnesses on addressing the challenges and opportunities that exist to modernizing the nation's transit system and learning how Congress can further assist their PTC implementation efforts.
- I ask for unanimous consent that these comments be included in the record. I would also like to include in the record letters I signed, along with several members of the Washington delegation and other colleagues, requesting a comprehensive update of PTC implementation and status update on Amtrak's speed limit action plans (as required by the FAST Act of 2015).
- With that, thank you again for allowing me to participate today, and I yield back.

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Congresswoman Pramila Jayapal (WA-07)
Statement Before Railroad Subcommittee on Positive Train Control
February 15, 2018

Chairman Denham and Ranking Member Capuano, thank you for inviting me on this panel this morning on the critically important issue of positive train control implementation.

Mr. Chairman, it seems that all too frequently we are hearing about one train derailment after another with the devastating loss of life and destruction of property. Many of these accidents could have been prevented if positive train control technologies had been in place and active. At the end of last year, we in Seattle became the latest inducted into the club of communities which have endured PTC-preventable accidents. On December 18, an Amtrak train travelling from Seattle, WA to Portland, OR derailed near DuPont, WA. Three passengers were killed and 62 passengers and crew were injured. In addition, eight people in vehicles on the highway underneath were injured

when the train derailed travelling 80 mph into a 30 mph curve. The NTSB determined that this accident was PTC-preventable.

And then two weeks ago, Seattle lost this sad distinction when another Amtrak train that derailed near Cayce, SC. Again, like the accident in Seattle, the NTSB determined that the derailment was PTC-preventable.

What makes matters worse, Mr. Chairman, is the NTSB recommended that railroads install PTC technology 50 years ago. Over the last 50 years, NTSB has found that 153 accidents causing more than 300 deaths and 6800 injuries could have been preventable if PTC technology had been in place.

Sadly, Mr. Chairman, it only seems like Congress acts after there is some kind of catastrophic accident. The original call for PTC technology by NTSB came after the collision of two Penn Central Commuter trains near Darien, CT in 1969. The mandatory implementation of PTC became law in 2008 only after a Metrolink accident in Chatsworth, CA killed 25 people and injured 102 others. And we may be on the cusp of another spurt

of congressional action now, Mr. Chairman, with the Amtrak derailments in Washington state and South Carolina in the last two and half months.

We have the opportunity now with the legislation introduced by our colleagues, the Ranking Member of the full Transportation Committee, Congressman Peter DeFazio and the Ranking Member of the Subcommittee on Railroads, Pipelines, and Hazardous Materials, Congressman Mike Capuano. The bill, H.R. 4766, the Positive Train Control Implementation and Financing Act of 2018, takes important steps forward in ensuring that train disasters due to speed can be greatly mitigated. More specifically, H.R. 4766 provides \$2.6 billion in grants to intercity passenger and commuter railroads to help implement PTC. The bill also eliminates the two-year extension for PTC and prohibits services on any new passenger route unless PTC is fully in place.

Like a child bargaining about bedtime, it's past time for all parties who are responsible in guaranteeing the safe transit of millions of passengers, to end the excuses and make this happen.

Mr. Chairman, the story of implementation of PTC is not all bleak. There are some entities like our own Sound Transit in Washington State and their partners that are seeking to stay on track with full implementation of PTC on their commuter lines. Still, we have to be vigilant. We cannot let PTC-preventable train accidents become the new normal.

I appreciate the opportunity to share my thoughts with this subcommittee and look forward to working together.

Thank you, Mr. Chairman. I yield back the balance of my time.

WRITTEN STATEMENT OF
 REP. ADAM SMITH
 CONGRESSMAN OF THE 9th DISTRICT WASHINGTON

BEFORE THE
 COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
 SUBCOMMITTEE ON RAILROADS, PIPELINES, AND HAZARDOUS MATERIALS
 U.S. HOUSE OF REPRESENTATIVES

“Oversight of Positive Train Control Implementation in the United States”

Thursday, February 15, 2018

Chairman Denham, Ranking Member Capuano, and Members of the Subcommittee: Thank you for the opportunity to share my perspectives about the importance of Positive Train Control (PTC) technology and how its implementation can prevent fatal train crashes. As a Member of Congress whose state recently experienced a deadly rail incident that claimed the lives of three people and injured many more, I appreciate the attention being paid to this lifesaving technology.

On the morning of December 18, 2017, Amtrak train 501 was carrying 77 passengers and five crewmembers as it headed southbound on its inaugural Point Defiance Bypass trip. This train was travelling at 78 miles per hour when it reached an overpass near DuPont, Washington and derailed. I can only imagine the fear that everyone on board experienced that day.

Reports from this crash strongly suggest that it could have been avoided; particularly had PTC technology been in use. The speed limit on the overpass where the derailment occurred was 30 miles per hour. There were signs for miles indicating that the train’s speed needed to be reduced, which seem to have been missed or mistaken by the crew. The preliminary NTSB reports on the investigation indicate that this derailment was the result of human error and that PTC could have prevented it. Unfortunately, while that technology was in-place along the train’s route, it was still being tested and not yet fully operational.

Positive Train Control can alert train crews of an impending reduction in allowable speed and, if the conductor does not comply, can automatically slow a train, potentially preventing a collision or derailment. PTC is also designed to prevent train-to-train collisions as well as the movement of a train through a rail switch that was left in the wrong position, which seemingly contributed to another recent rail incident in South Carolina that claimed the lives of two crew members.

PTC technology is not new and is a necessary backstop that should have been implemented on all commuter and freight train routes around the country by now. The NTSB first called for PTC to be implemented on railroads almost fifty years ago and Congress mandated its implementation in the Rail Safety Improvement Act of 2008. That legislation set a deadline of December 2015 to fully implement PTC, but due to delays in implementation, the deadline was delayed by Congress. I am pleased that in Washington State, several rail operators will have PTC implemented by the end of 2018.

However, I worry that, as we come closer to the 2018 deadline, PTC is still far from being in widespread use. As of the latest available Federal Railroad Administration (FRA) report, dated September 30, 2017, PTC was only operational on 24 percent of passenger routes and 45 percent of freight routes nationwide. Undoubtedly, implementing PTC technology involves significant challenges, including the integration of new technologies into existing rail infrastructure, the need for extensive testing, and considerable cost to the companies making these changes. However, the lives of commuters and rail workers around the country require that Congress do more to facilitate and ensure full PTC implementation as soon as possible.

Increased funding for the (FRA) and the Federal Communications Commission (FCC) is an important way that Congress can help speed the implementation of PTC. Inadequate support could lead to more delays and, in the interim, could lead to more derailments. A Government Accountability Office (GAO) report conducted in 2015 concluded that stalled field tests and delays in certification of PTC technology were caused by the FRA's inability to install a dedicated FRA inspector at each railroad for regular reporting on the railroad's progress. Ranking Member Defazio's legislation, H.R. 4766, the Positive Train Control Implementation and Financing Act, of which I am a cosponsor, can help by increasing funding for implementation of PTC. It would also prevent the opening of new routes without PTC technology and, as also called for by the GAO report, would increase reporting requirements.

Around the country, there is still much work to be done to ensure full implementation of PTC and Congress has an important role to play in the process. I hope to work with the Members on this Committee and our colleagues in the House and Senate to ensure that PTC technology is implemented on all U.S. railroads as soon as possible, to prevent further accidents from happening. Thank you.



Testimony of

The Honorable Robert L. Sumwalt, III
Chairman
National Transportation Safety Board

Before the

Subcommittee on Railroads, Pipelines, and Hazardous Materials
Committee on Transportation & Infrastructure
United States House of Representatives

— On —

Oversight of Positive Train Control Implementation in the
United States

Washington, DC • February 15, 2018

NTSB | National
Transportation
Safety Board
An Independent Federal Agency

Good morning, Chairman Denham, Ranking Member Capuano, and Members of the Subcommittee. Thank you for inviting the National Transportation Safety Board (NTSB) to testify before you today.

The NTSB is an independent federal agency charged by Congress with investigating every civil aviation accident and significant incidents in the United States, as well as significant accidents and incidents in other modes of transportation—railroad, highway, marine, and pipeline. We determine the probable cause of these accidents and other transportation events and issue safety recommendations aimed at preventing future accidents. In addition, we carry out special studies concerning transportation safety and coordinate the resources of the federal government and other organizations to assist victims and their family members who have been impacted by major transportation disasters.

On November 14, 2016, we announced our Most Wanted List of Transportation Safety Improvements for 2017–2018.¹ This list, based on safety issues we have identified in our investigations, highlights the 10 areas in transportation safety where we believe improvements are most critical. One issue area on this cycle’s Most Wanted List is “Increase Implementation of Collision Avoidance Technologies,” which addresses the need for positive train control (PTC) to reduce accidents, prevent injuries, and save lives.

Positive Train Control

PTC is an advanced train control system designed to prevent train-to-train collisions, overspeed derailments, incursions into established work zones, and movement through a switch left in the wrong position. If a train does not slow for an upcoming speed restriction, PTC will alert the engineer. If an appropriate action is not taken, PTC will apply the train’s brakes before the speed restriction is violated.

The first NTSB-investigated accident that train control technology would have prevented occurred in 1969, when 4 people died and 43 were injured in the collision of two Penn Central commuter trains in Darien, Connecticut. In the 49 years since then, we have investigated 150 accidents that could have been prevented by PTC. These accidents have claimed almost 300 lives.

Many train collisions and overspeed derailments are caused by operational errors involving human performance failures. A large number of these human performance failures involve a variety of factors such as fatigue, sleep disorders, medications, loss of situational awareness, reduced visibility, and distractions in the operating cab. Many of these PTC-preventable accidents occurred after train crews failed to comply with train control signals, follow operating procedures in non-signaled or “dark” territories, observe work zone protections, or adhere to other specific operating rules such as returning track switches to normal position after completing their work at

¹ NTSB, *2017–2018 Most Wanted List* (Washington, DC: NTSB, 2016).

railroad sidings. We may never eliminate human error from the railroad system, but PTC provides a level of redundancy to protect trains and those on board when those errors do occur.

Congress mandated PTC in the Rail Safety Improvement Act of 2008 (RSIA), in the aftermath of the 2008 accident in Chatsworth, California, in which a Metrolink commuter train and a Union Pacific freight train collided head-on, killing 25 people and injuring 102 others.² Our investigation concluded that the Metrolink engineer's use of a personal electronic device to send text messages distracted him from his duties and that PTC could have prevented this accident. RSIA required the implementation of a PTC system on each line over which intercity passenger or commuter service is operated or over which poison- or toxic-by-inhalation hazardous materials were transported, by December 31, 2015.³ In October 2015, Congress extended this deadline to December 31, 2018, and included provisions for railroads to request an additional 24-month extension to December 31, 2020, if certain criteria are met.⁴

The NTSB is gravely concerned that the majority of the Nation's railroads required to install PTC will not have fully operational PTC systems by the December 31, 2018, deadline. For each day that goes by without PTC, we are at continued risk for another tragic accident, such as those described below.

NTSB Investigations of PTC-Related Accidents

Since the enactment of RSIA, we have completed investigations of 22 accidents that could have been prevented by PTC, and which resulted in 23 deaths, over 314 injuries, and over \$126 million in property damage. These include:

- In September 2010, near Two Harbors, Minnesota, human error and fatigue contributed to the collision of two freight trains. Five crewmembers were injured.
- In April 2011, near Red Oak, Iowa, fatigue contributed to the rear-end collision of a coal train with a standing maintenance-of-way equipment train. Two crewmembers were killed.
- In May 2011, in Hoboken, New Jersey, human error contributed to the collision of a train with the bumping post at the end of the track.
- In June 2012, near Goodwell, Oklahoma, human inattentiveness contributed to the collision of two freight trains. Three crewmembers were killed.

² NTSB, *Collision of Metrolink Train 111 With Union Pacific Train LOF65-12 Chatsworth, California September 12, 2008*, Rpt. No. NTSB/RAR-10/01 (January 21, 2010).

³ Rail Safety Improvement Act of 2008, Pub. L. No. 110-432, § 104 (October 16, 2008).

⁴ Positive Train Control Enforcement and Implementation Act of 2015, Pub. L. No. 114-73, § 1302 (October 29, 2015).

- In May 2013, near Chaffee, Missouri, inattentiveness and fatigue contributed to the collision of two freight trains. Two crewmembers were injured and a highway bridge collapsed.
- In December 2013, in the Bronx, New York, fatigue contributed to the derailment of a passenger train. Four passengers were killed and 61 others were injured.

Amtrak 188 Derailment—Philadelphia, Pennsylvania

The deadliest PTC-preventable accident since Chatsworth occurred on May 12, 2015, when Amtrak Northeast Regional train 188 derailed in Philadelphia, Pennsylvania. The train, operating northbound from Washington to New York City, departed Philadelphia's 30th Street Station and derailed while traveling through a curve at Frankford Junction. Maximum speed through the curve was 50 miles-per-hour (mph), but the train was traveling at 106 mph when the engineer applied the emergency brake system. Eight passengers were killed and more than 185 others were injured. We determined the probable cause of this accident to be the engineer's acceleration as he entered the curve, due to his loss of situational awareness likely because his attention was diverted to an emergency situation with another train. Contributing to the accident was the lack of a PTC system.⁵

PTC had not yet been implemented in the area at the time of this accident. Afterward, in December 2015, Amtrak finished installing and implementing PTC on all Amtrak-owned property along its Northeast Corridor (NEC) where it was required; however, there are approximately 94 miles of track on the NEC that are owned by other railroads, and those segments are not PTC equipped. Additionally, the NEC only consists of 4 percent of Amtrak's route miles. Amtrak must rely on other host railroads to implement PTC on the remaining 96 percent of route miles.⁶

The NTSB continues to investigate accidents that occur on other tracks that remain unprotected by PTC.

Amtrak 501 Derailment—DuPont, Washington

On the morning of December 18, 2017, on its first regular passenger service trip, Amtrak passenger train 501 derailed as it traversed a curve near DuPont, Washington. The lead locomotive, the power car, and two passenger railcars derailed from an overpass onto Interstate 5. At the time of the accident, 77 passengers, 5 Amtrak employees, and a technician from the railcar manufacturer, Talgo Incorporated, were on the train. Of these individuals, 3 passengers were killed and 62 passengers and crewmembers were injured. Eight individuals in highway vehicles were

⁵ NTSB, *Derailment of Amtrak Passenger Train 188 Philadelphia, Pennsylvania, May 12, 2015*. Rpt. No. NTSB/RAR-16/02 (May 17, 2016).

⁶ NTSB, *Amtrak Train Collision with Maintenance-of-Way Equipment, Chester, Pennsylvania, April 3, 2016*. NTSB/RAR-17/02 (November 14, 2017).

also injured. Our investigation is ongoing, but on January 4, 2018, we issued a preliminary report regarding this derailment.⁶

Central Puget Sound Regional Transit Authority (Sound Transit), a public transit agency in the state of Washington, owns the Point Defiance Bypass tracks where the derailment occurred. Sound Transit reported that the PTC system on this line was not operational at the time of the accident. The authorized track speed decreases from 79 mph to 30 mph as the track approaches the curve. According to the lead locomotive's event data recorder, the final recorded speed of the locomotive was 78 mph. In this accident, PTC would have notified the train engineer about the speed reduction for the curve, and if he did not take appropriate action to control the train's speed, PTC would have applied the train brakes to maintain compliance with the speed restriction and to stop the train.

Amtrak 91 Collision with CSX Train—Cayce, South Carolina

In the early morning of February 4, 2018, an Amtrak passenger train unexpectedly entered a siding near Cayce, South Carolina, and collided with a stationary CSX freight train. It is still very early in the investigation, but we do have some preliminary factual information. According to preliminary information, there were 139 passengers and 8 crew on the Amtrak train. Two of the crewmembers—the engineer and the conductor—were killed, and 116 others were injured.

At the time of the accident, a signal suspension was in place through the area, due to signal work being done, including upgrades to prepare for implementation of PTC. Trains were being directed through the area by a CSX dispatcher, who would issue warrants, or permissions, to use the main line.⁷ The crew of the CSX had completed work in the area, moved the train to the siding, and released their authority to use the main line back to the dispatcher. However, the switch on the main line was left open to the siding and locked. The Amtrak train, traveling at 57 mph, was diverted into the siding from the main and struck the CSX train.

This is the second accident that we are investigating involving a train being unexpectedly diverted onto a side track because of a switch left in the incorrect position in an area of track under "signal suspension" due to installation and testing of PTC. On December 5, 2017, we issued an accident brief regarding the collision of two Union Pacific Railroad freight trains that occurred on March 14, 2016, in Granger, Wyoming. One crew member received minor injuries. We determined that the probable cause of the accident was that the employee-in-charge incorrectly used information from a conversation with the train dispatcher as authorization to send a train into

⁶ NTSB, *Preliminary Report, RRD18MR001* (January 4, 2018).

⁷ Signal suspension means train control signals located alongside the track have been taken out of service, oftentimes for maintenance or system upgrades. When these signals are taken out of service, train movements are controlled by means such as absolute blocks or by track warrants.

the signal suspension territory. Contributing to the accident was the failure of a crew member to check the switch position before authorizing the train to enter the signal suspension territory.⁸

As with the Granger accident, part of our investigation into the Cayce accident will involve examining train operations through signal suspension areas, in addition to other safety issues.

End-of-Track Collisions at Terminal Stations

On February 6, 2018, the NTSB held a board meeting to consider a special investigation report based on investigations into two very similar accident that occurred within 13 weeks of one another. In both accidents, the engineers failed to stop their trains before reaching the end of a terminating track at a station. The September 29, 2016, accident on the New Jersey Transit commuter railroad at Hoboken, New Jersey, killed one person, injured 110, and resulted in major damage to the passenger station. The January 4, 2017, accident on the Long Island Rail Road, (a subsidiary of Metropolitan Transportation Authority) at the Atlantic Terminal in Brooklyn, New York, injured 108 people.⁹ The probable causes of the accidents involved each of the engineers' impairment as a result of undiagnosed severe sleep apnea.

Federal regulation permits certain main line tracks to be excluded from PTC requirements.¹⁰ According to the Federal Railroad Administration (FRA), there are at least 35 passenger train terminals in the United States with terminating tracks -- that is, tracks that end at a bumping post and/or platform. Most train movements on these terminating tracks are protected only by rules compliance and the attentiveness of the engineer. All passenger railroads that operate terminals with terminating tracks, including New Jersey Transit and Long Island Rail Road, have asked to be excluded from installing PTC within the terminals and the FRA has granted all the requests.¹¹ Our investigation noted the challenges with implementing PTC in such stations due to operational necessity and technological challenges. However, as evidenced by these two accidents, relying solely on an engineer's ability to stop his or her train does not provide the level of safety necessary to protect the public. To address this safety issue, we have made a recommendation to the FRA to require intercity passenger and commuter railroads to implement technology to stop a train before reaching the end of tracks.

Conclusion

⁸ NTSB, *Collision of Two Union Pacific Railroad Freight Trains, Granger, Wyoming*. Rpt. No. NTSB/RAB-17-10 (December 5, 2017).

⁹ NTSB, *Abstract of Special Investigation Report, End-of-Track Collisions at Terminal Stations, Hoboken, New Jersey, September 29, 2016, and Atlantic Terminal, Brooklyn, New York, January 4, 2017*. (February 6, 2018).

¹⁰ Title 49 CFR 236.1019.

¹¹ NTSB understands that FRA has received one additional request that has not yet been granted pending further information from the railroad.

It has been nearly half a century since the NTSB first recommended technology such as PTC, and it has been almost 10 years since Congress mandated its implementation. In the meantime, because PTC implementation has been delayed, we continue to see more accidents, injuries, and fatalities, that could be prevented by a fully functioning PTC system. Lives depend on it.

Thank you for the opportunity to testify before you today. I look forward to responding to your questions.

“Oversight of Positive Train Control Implementation in the United States”
Thursday, February 15, 2018, 10:00 a.m.
2167 Rayburn House Office Building
Washington, D.C.

Questions for the Record

Submitted on behalf of Congressman Jason Lewis (MN-02)

1. Chairman Sumwalt, it was discussed that PTC does not prevent crashes at grade crossings and doesn't prevent the fatalities caused by trespassers on rail infrastructure. Has the National Transportation Safety Board (NTSB) provided any recommendations to tackle these issues? If higher speeds were pursued in the United States, do you expect the number of fatalities would increase? Has the NTSB provided recommendations in the instance higher speeds are pursued?

The NTSB has long been concerned with crashes at grade crossings and the dangers of railroad trespassing. We have issued recommendations to address grade separation, grade crossing closures, four-quadrant gates, active warning devices, fencing and other concerns. In 2015, we held a public forum to draw on the expertise of railroads, regulators, and researchers, among others, to review the diversity of trespassing accidents and incidents and look at current and future prevention strategies. As the result of efforts by the railroads, regulators, communities, and safety advocates, there has been significant progress to reduce fatalities.

The Amtrak Northeast Corridor is an example of where such efforts to mitigate grade crossing and trespasser accidents have been implemented and could provide lessons learned to prevent injuries and fatalities in other areas where higher speed rail is pursued.

Regarding current open recommendations, in 2015 we investigated an accident in Oxnard, California, in which a Metrolink commuter train collided with a truck towing a trailer which the driver had turned onto the railroad right-of-way due to acute fatigue and unfamiliarity with the area. We recommended that companies which offer driver navigation applications should incorporate grade crossing-related geographic data into their applications to provide road users additional safety cues and to reduce the likelihood of crashes at or near grade crossings.

Submitted on behalf of Ranking Member Peter DeFazio (OR-04)

1. Please provide information for the hearing record on the urgent safety recommendation that the FRA issued on February 15, 2018 in response to the Granger, Wyoming, and Cayce, South Carolina accidents. Has the Federal Rail Administration (FRA) indicated to NTSB whether they intend to issue the Executive Order as recommended by the NTSB?

The urgent safety recommendation issued on February 15, 2018 is attached (Attachment 1).

On March 14, 2018, the FRA responded to our recommendation, stating that “FRA is considering the NTSB’s recommendation to determine what measures are necessary to ensure safety when railroads temporarily suspend signal systems to implement PTC technology. Once FRA has made that determination and decided whether additional action by FRA is necessary to address the NTSB’s recommendation, FRA will provide an additional response letter to the NTSB detailing FRA’s plan of action.” The recommendation is currently classified as “Open – Initial Response Received.”

2. Please provide for the hearing record a list of all rail safety recommendations issued by the NTSB that are designated as open or closed - unacceptable. Please designate which of those recommendations are related to the NTSB’s Most Wanted List of Safety Improvements.

The requested information regarding rail, including transit, recommendations are attached:

Attachment 2 - All rail safety recommendations classified as “Open – Unacceptable Response”

Attachment 3 - Recommendations classified as “Open – Unacceptable Response” that are related to the 2017-2018 NTSB Most Wanted List of Safety Improvements.

Attachment 4 - All rail safety recommendations classified as “Closed – Unacceptable Response.” [Editor’s note: This attachment is voluminous (302 pages) and is therefore posted online at the Government Publishing Office’s standards-compliant preservation repository at <https://www.govinfo.gov/content/pkg/CPRT-115HPRT30305/pdf/CPRT-115HPRT30305.pdf>.]

Due to changes to the Most Wanted List and the intended focus of the List on open recommendations, we do not have the ability to accurately designate which recommendations classified as “Closed” are related to past or current Most Wanted List issue areas.

3. Mr. Tolman mentioned that fatigue is the number one safety measure in the railroad industry. What safety improvements should the rail industry and labor make to address fatigue?

Operator fatigue is a significant risk in all transportation modes. The NTSB considers fatigue as one component of operator fitness-for-duty, and NTSB has advocated for many safety improvements to ensure that all operators maintain acceptable levels of fitness-for-duty. For example, the NTSB has identified the importance of health screening, diagnosis, and ensuring adequate treatment for sleep apnea and limitations on hours-of-service as safety improvements for individual operators. And, NTSB has identified the use of science-based tools, such

as the Fatigue Avoidance Scheduling Tool and other biomathematical models of human fatigue, as safety improvements for companies planning the work schedules of employees to ensure they are afforded adequate time for restorative sleep between work shifts.

Submitted on behalf of Mr. DeSaulnier (CA-11)

1. Positive Train Control (PTC) is one of the ways to mitigate risk associated with human factors in railroad operations. I have personally met with the National Labs who continue to do research on human factors, data that can be used and applied broadly across different disciplines. Other industries that are particularly adept at this kind of work are hospitals, refineries, and chemical plants.
 - As you look at recent incidents in railway safety in service of your mission to make recommendations, how do you identify and implement best practices in mitigating risk related to human factors and to inform best practices, both from within and outside the transportation sector?
 - How could additional opportunities and resources for this kind of sharing benefit NTSB and safety in transportation more broadly?

The NTSB believes that mitigating safety risks arising from human factors are best addressed through comprehensive and accepted Safety Management Systems (SMS). This approach toward safe work environments relies on clear and proactive company policies for safety, in-depth risk assessments of current and foreseeable worker activities, comprehensive safety assurance programs to sustain safe work behaviors, and compelling safety promotion efforts that reinforce safety throughout all levels of the organizations.

While SMS programs provide the necessary infrastructure to establish and sustain safe work, continual improvements are needed to address safety shortcomings and emerging hazardous work situations. All of the NTSB Human Performance investigators routinely meet to look at issues and solutions across all modes transportation; additionally, they attend conferences where they learn about human factors issues and solutions across all industries. Our original recommendations for locomotive cab audio and video recorders came from our experience with aircraft cockpit voice recorders. Recently we made a recommendation to the FRA to require railroads install cell phone signal detectors in locomotive cabs to be able to identify unauthorized cell phone use while operating a locomotive. This recommendation was based on use of such devices in prisons to detect cell phones that may be used by prisoners, as well as use by the US Army to detect improvised explosive devices that are triggered by cell phones

Another example of implementing a human factors solution from another industry was our recommendation for the development of a pipeline SMS standard. We

specifically asked the American Petroleum Institute to lead the development of this standard not only based on their pipeline experience but their experience in developing similar standards for the refining, chemical, and off-shore oil and gas exploration industries.

2. In 2015, NTSB recommended that the FRA require railroads to install, in all controlling locomotive cabs and cab car operating compartments, audio and image recorders and that the railroads regularly review the audio and visual data on these recorders. What value do these recorders offer for improving railroad safety?

The benefits of these recording devices are two-fold – first, they enable accident investigators to identify and address safety issues that otherwise frequently remain unknown; second, they allow railroads to verify train crew actions and train operating conditions to improve operational safety as part of their Safety Management System plans.

The NTSB has been making recommendations on this issue since its investigation of the 1996 collision of a Maryland Rail Commuter (MARC) train and an Amtrak train near Silver Spring, Maryland, in which eleven people died. As a result of the Silver Spring investigation, the NTSB recommended that FRA require railroads to install locomotive cab audio recorders. In the years since the FRA's failure to act on that recommendation, the NTSB has investigated numerous accidents and made recommendations to FRA and railroads calling for the installation of audio and image recorders that would provide information to help determine probable cause and improve safety. In all too many accidents, the individuals directly involved were either limited in their recollection of events or were not available to be interviewed because of fatal injuries.

The NTSB believes it is critical that FRA require railroads to install crash- and fire-protected inward- and outward-facing audio and image recorders in locomotive cabs and cab car operating compartments. The devices should have a minimum 12-hour continuous recording capability with recordings that are easily accessible for review, with appropriate limitations on public release.

Attachment 1 - Safety Recommendation R-18-005 - Train Operation During Signal Suspension



National Transportation Safety Board
Washington, DC 20594

Safety Recommendation Report
Train Operation During Signal Suspension

Accident/Incident Number:	RRD18MR003
Operator:	CSX Transportation
Accident:	Amtrak/CSX Train Collision
Location:	Cayce, South Carolina
Date:	February 4, 2018
Recommendation Number:	R-18-005
Adopted:	February 13, 2018

The National Transportation Safety Board (NTSB) is investigating a head-on collision that occurred on February 4, 2018, about 2:27 a.m. eastern standard time on the CSX Transportation (CSX) Columbia Subdivision in Cayce, South Carolina. Southbound Amtrak train 91, operating on a track warrant, diverted from the main track through a reversed hand-thrown switch into a siding and collided head-on with stationary CSX local freight train F777 03.¹

The engineer and conductor of the Amtrak train died as a result of the collision. At least 92 passengers and crewmembers on the Amtrak train were transported to medical facilities. The engineer of the stopped CSX train had exited the lead locomotive before the Amtrak train entered the siding, ran to safety, and was not injured. The conductor of the CSX lead locomotive saw the Amtrak train approaching in the siding and ran to the back of locomotive. The conductor was thrown off the locomotive and sustained minor injuries.

The normal method of train operation on the subdivision was a traffic control system with wayside signals. Signal indications authorize movement in either direction. On the day before the accident, February 3, 2018, CSX signal personnel suspended the traffic control signal system to install updated traffic control system components for implementing positive train control (PTC) on the subdivision. During this time, scheduled to last through February 4, 2018, the signals would not operate and dispatchers would use track warrants to move trains through absolute blocks in the

¹ *Track warrant* is a method of authorizing movements or protecting employees or on-track equipment in signaled or nonsignaled territory on controlled track within specified signals. These movements are under the jurisdiction of the train dispatcher.

Attachment 1 - Safety Recommendation R-18-005 - Train Operation During Signal Suspension

work territory.² Although the installation was only partially complete, the signal personnel stopped work at the accident location at 7:00 p.m., and the signal suspension remained in place.

Previous Investigation

On March 14, 2016, NTSB investigated a similar collision, which involved two Union Pacific Railroad (UP) freight trains in Granger, Wyoming. Westbound UP freight train KG1LAC-13 (5718 West) traveled from the main track through a switch into a controlled siding and collided head on with stopped eastbound UP local freight train LCK41-14 (5155 East). At the time, UP was installing and testing PTC on the main track. While this work was in progress, UP employees suspended signals and established absolute blocks to ensure that trains could move safely through the areas without signals (the suspension).

When 5718 West entered the limits of the suspension on main track 1, it was traveling about 46 mph. The crew saw that the switch at CP G844 was lined so that their train would enter a siding instead of continuing on main track 1. Typically, switches were not lined until the dispatcher had decided the next movement through the switch; therefore, the switch was still lined for the previous train movement. The engineer immediately applied the emergency brakes, and the train slowed to about 30 mph and collided with the stopped 5155 East.

The NTSB determined that the probable cause of the accident was that the employee-in-charge incorrectly used information from a conversation with the train dispatcher as authorization to send a train into the signal suspension territory. Contributing to the accident was the failure of the conductor pilot at CP G844 to check the switch position before authorizing the train to enter the signal suspension territory.³

Previous Recommendation to Federal Railroad Administration

On July 14, 2009, a Dakota, Minnesota & Eastern Railroad (DME) freight train was operating under track warrant authority in nonsignaled territory on the main track when it went into Bettendorf Yard in Bettendorf, Iowa, via a misaligned hand-operated switch and struck 19 loaded railcars on a yard track. The hand-operated switch had been left incorrectly lined from the main track onto the yard track by the crew of a BNSF Railway local train. The engineer and the conductor on the DME train sustained fatal injuries. The NTSB determined that the probable cause of the accident was, in part, the BNSF Railway local train crew releasing track warrant authority before returning the hand-operated switch to the correct position.⁴

² (a) CSX used a mandatory directive, known as an EC-1 form, permitting passenger trains to proceed at speeds not to exceed 59 mph and for freight trains to proceed at speeds not to exceed 49 mph. (b) *Absolute block* means a block in which no train is permitted to enter while it is occupied by another train.

³ National Transportation Safety Board, *Collision of Two Union Pacific Railroad Freight Trains, Granger, Wyoming, March 14, 2016*, RAB-17/10 (Washington, DC: National Transportation Safety Board, 2017).

⁴ National Transportation Safety Board, *Collision of Dakota, Minnesota & Eastern Railroad Freight Train and 19 Stationary Railcars, Bettendorf, Iowa, July 14, 2009*, RAR-12/03 (Washington, DC: National Transportation Safety Board, 2012).

Attachment 1 - Safety Recommendation R-18-005 - Train Operation During Signal Suspension

As a result of the Bettendorf, Iowa, accident, the NTSB issued the following recommendation to the Federal Railroad Administration (FRA):

R-12-29

Require that until appropriate switch position warning technology is installed on main track switches (in non-signaled territory not equipped with positive train control), when a main track switch has been reported relined for a main track, the next train to pass the location approach the switch location at restricted speed. That train crew should then report to the dispatcher that the switch is correctly lined for the main track before trains are allowed to operate at maximum authorized speed.

On April 18, 2013, NTSB classified Safety Recommendation R-12-29 *Closed—Reconsidered* because the FRA argued that implementing this recommendation, which would apply to 52% of US railroad route miles, would be too disruptive to transportation.⁵

Ongoing Investigation

In the current accident in Cayce, South Carolina, as well as in the Granger accident, the evidence indicates that human decision making and actions likely played key roles in the accident scenarios. In both accidents, safe movement of the trains through the signal suspension depended on proper switch alignment, which, in turn, relied on error-free manual work. The risk of error in the manual work was not safeguarded, either by technology or supervision. Thus, the reliance on error-free human performance for safe train movement created a single point-of-failure in the operating practices currently used and in compliance with extant regulations.⁶ The NTSB concludes that additional measures are needed, such as restricted speed, to ensure safe operations during signal suspensions, especially during the movement of passenger trains, due to the likelihood of harm to the traveling public.⁷

Therefore, the NTSB recommends that the Federal Railroad Administration (FRA) issue an Emergency Order directing railroads to require that when signal suspensions are in effect and a switch has been reported relined for a main track, the next train or locomotive to pass the location must approach the switch location at restricted speed. After the switch position is verified, require the train crew to report to the dispatcher that the switch is correctly lined for the main track before trains are permitted to operate at maximum-authorized speed.

⁵ *Dark Territory Working Group Update*, presentation to the 44th Railroad Safety Advisory Committee Meeting, May 20, 2011.

⁶ Technical studies on human performance have established that people are prone to committing errors of omission and commission and, therefore, safety-critical tasks must be designed with safeguards and fail-safe mechanisms to avoid system failures and catastrophic consequences (J. Reason, *Human Error* (Cambridge, U.K.: Cambridge University Press, 1990)).

⁷ According to Title 49 *Code of Federal Regulations (CFR)* 236.812, *restricted speed* is a speed that will permit stopping within one-half the range of vision, but not exceeding 20 miles per hour.

Attachment 1 - Safety Recommendation R-18-005 - Train Operation During Signal Suspension

This recommendation would apply only to areas subject to a signal suspension—a minute portion of the United States’ rail network, whereas Safety Recommendation R-12-29 applied to all railroad dark territory.

Recommendation

As a result of this report, the National Transportation Safety Board makes the following urgent safety recommendation:

To the Federal Railroad Administration:

Issue an Emergency Order directing railroads to require that when signal suspensions are in effect and a switch has been reported relined for a main track, the next train or locomotive to pass the location must approach the switch location at restricted speed. After the switch position is verified, the train crew must report to the dispatcher that the switch is correctly lined for the main track before trains are permitted to operate at maximum-authorized speed. (R-18-005) (**Urgent**)

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

ROBERT L. SUMWALT, III
Chairman

EARL F. WEENER
Member

T. BELLA DINH-ZARR
Member

Adopted: February 13, 2018



Attachment 2 - Rail Recommendations Classified as "Open – Unacceptable Response"

Recommendation Report

Mode: Rail Addressee Status: OUA

Product/Notation Id 54772 / Accident Date: 06/20/98 Issue Date: 01/13/00
 City/State: Burnt Cabins, PA Accident #: HWY98MH033 Most Wanted List: No

The National Transportation Safety Board has investigated many incidents in all passenger transportation modes in which the use of a licit medication by a vehicle operator has been causal or contributory. As a result, the safety board has previously recommended that various agencies take certain actions to address issues pertaining to the use of medications.

Recommendation # :	R-00-002	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Develop, then periodically publish, an easy-to-understand source of information for train operating crewmembers on the hazards of using specific medications when performing their duties.					
# of Addressees:	1	Overall Date Closed:			
Addressee:	FRA	Open - Unacceptable Response	Date Closed:		
			N/A		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:29 AM

Recommendation Report

Product/Notation Id 54773 / Accident Date: 06/20/98 Issue Date: 01/13/00
 City/State: Burnt Cabins, PA Accident #: HWY98MH033 Most Wanted List: No

The National Transportation Safety Board has investigated many incidents in all passenger transportation modes in which the use of a licit medication by a vehicle operator has been causal or contributory. As a result, the safety board has previously recommended that various agencies take certain actions to address issues pertaining to the use of medications.

Recommendation # :	R-00-003	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Establish and implement an educational program targeting train operating crewmembers that, at a minimum, ensures that all crewmembers are aware of the source of information described in R-00-2 regarding the hazards of using specific medications when performing their duties.					
# of Addressees:	1	Overall Date Closed:		N/A	
Addressee:	FRA	Open - Unacceptable Response	Date Closed:		N/A



Attachment 2 - Rail Recommendations Classified as "Open – Unacceptable Response"

3/19/2018 9:24:29 AM

Recommendation Report

Product/Notation Id 54774 / Accident Date: 06/20/98 Issue Date: 01/13/00
 City/State: Burnt Cabins, PA Accident #: HWY98MH033 Most Wanted List: No

The National Transportation Safety Board has investigated many incidents in all passenger transportation modes in which the use of a licit medication by a vehicle operator has been causal or contributory. As a result, the safety board has previously recommended that various agencies take certain actions to address issues pertaining to the use of medications.

Recommendation # :	R-00-004	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Establish, in coordination with the U.S. Dept. of Transportation, the Federal Motor Carrier Safety Administration, the Federal Transit Administration, and the U.S. Coast Guard, comprehensive toxicological testing requirements for an appropriate sample of fatal highway, railroad, transit, and marine accidents to ensure the identification of the role played by common prescription and over-the-counter medications. Review and analyze the results of such testing at intervals not to exceed every 5 years.					
# of Addressees:	1	Overall Date Closed:			
Addressee:	FRA	Open - Unacceptable Response	Date Closed:		
			N/A		



Attachment 2 - Rail Recommendations Classified as "Open – Unacceptable Response"

3/19/2018 9:24:29 AM

Recommendation Report

Product/Notation Id 46373 / **Accident Date:** 12/07/03 **Issue Date:** 06/07/06
City/State: San Antonio, TX **Accident #:** DCA04FR004 **Most Wanted List:** No

On December 7, 2003, about 12:12 a.m., central standard time, a Union Pacific Railroad (UP) switching foreman was struck and killed by two locomotives at the UP's East Yard in San Antonio, Texas. The two locomotives were operated as a single unit under the foreman's control. He was operating the locomotives from the ground using a remote control transmitter. He usually had a helper. However, the night the accident occurred, the helper position was not filled because of a crew dispatch problem, so the foreman worked alone. He was moving the locomotives from track 32 to train yard track 3, where he was assigned to switch 44 railroad cars. When the accident occurred, the locomotives were traveling about 11 mph and were moving back over the track they had just traversed rather than over the route leading to the destination (train yard track 3).

Recommendation # :	R-06-007	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Require railroads to implement for all power-assisted switch machines, regardless of location, a formal commissioning procedure and a formal maintenance program that includes records of inspections, tests, maintenance, and repairs.					
# of Addressees:	1	Overall Date Closed:	N/A		
Addressee:	FRA	Open - Unacceptable Response	Date Closed:	N/A	



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:29 AM

Recommendation Report

Product/Notation Id 46374 / 7780_2 Accident Date: 12/07/03 Issue Date: 06/07/06
 City/State: San Antonio, TX Accident #: DCA04FR004 Most Wanted List: No

On December 7, 2003, about 12:12 a.m., central standard time, a UP switching foreman was struck and killed by two locomotives at the UP's East Yard in San Antonio, Texas. The two locomotives were operated as a single unit under the foreman's control. He was operating the locomotives from the ground using a remote control transmitter. He usually had a helper. However, the night the accident occurred, the helper position was not filled because of a crew dispatch problem, so the foreman worked alone. He was moving the locomotives from track 32 to train yard track 3, where he was assigned to switch 44 railroad cars. When the accident occurred, the locomotives were traveling about 11 mph and were moving back over the track they had just traversed rather than over the route leading to the destination (train yard track 3).

Recommendation # :	R-06-008	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE UNION PACIFIC RAILROAD: Issue written guidance that emphasizes the importance of using specified wire requirements to the employees responsible for installing and maintaining power-assisted switch machines.					
# of Addressees:	1	Overall Date Closed:		N/A	
Addressee:	Union Pacific	Open - Unacceptable Response	Date Closed: N/A		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:29 AM

Recommendation Report

Product/Notation Id	46633 /	Accident Date:	01/09/07	Issue Date:	04/10/08
City/State:	Woburn, MA	Accident #:	DCA07FR006	Most Wanted List:	No

On Tuesday, January 9, 2007, at 1:38 p.m., southbound Massachusetts Bay Transportation Authority (MBTA) passenger train 322 operated by Massachusetts Bay Commuter Railroad (MBCR) struck a track maintenance vehicle that was on the track near Woburn, Massachusetts. Passenger train 322 consisted of six passenger cars, including a lead control car, and a locomotive pushing from the rear. The track maintenance vehicle was thrown forward about 210 feet; the train did not derail. Of the six maintenance-of-way employees (work crew) working on or near the track maintenance vehicle, two were killed, and two were seriously injured. Emergency responders treated and released 10 passengers at the accident scene. As a result of the accident, 160 feet of rail, 80 crossties, and 100 tons of ballast had to be replaced. The cost, including labor, was \$15,841. The accident damaged the lead control car and undercarriage of the train. Repairing the train cost an estimated \$450,000. The track maintenance vehicle was destroyed; replacing it cost \$95,000. Total estimated property damage was \$560,841.

Recommendation # :	R-08-006	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Require redundant signal protection, such as shunting, for maintenance-of-way work crews who depend on the train dispatcher to provide signal protection.					
# of Addressees:	1	Overall Date Closed:	N/A		
Addressee:	FRA	Open - Unacceptable Response	Date Closed:	N/A	



Attachment 2 - Rail Recommendations Classified as "Open – Unacceptable Response"

3/19/2018 9:24:29 AM

Recommendation Report

Product/Notation Id 46634 / Accident Date: 01/09/07 Issue Date: 04/10/08
 City/State: Woburn, MA Accident #: DCA07FR006 Most Wanted List: No

On Tuesday, January 9, 2007, at 1:38 p.m., southbound Massachusetts Bay Transportation Authority (MBTA) passenger train 322 operated by Massachusetts Bay Commuter Railroad (MBCR) struck a track maintenance vehicle that was on the track near Woburn, Massachusetts. Passenger train 322 consisted of six passenger cars, including a lead control car, and a locomotive pushing from the rear. The track maintenance vehicle was thrown forward about 210 feet; the train did not derail. Of the six maintenance-of-way employees (work crew) working on or near the track maintenance vehicle, two were killed, and two were seriously injured. Emergency responders treated and released 10 passengers at the accident scene. As a result of the accident, 160 feet of rail, 80 cross-ties, and 100 tons of ballast had to be replaced. The cost, including labor, was \$15,841. The accident damaged the lead control car and undercarriage of the train. Repairing the train cost an estimated \$450,000. The track maintenance vehicle was destroyed; replacing it cost \$95,000. Total estimated property damage was \$560,841.

Recommendation # :	R-08-007	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Revise the definition of covered employee under 49 Code of Federal Regulations Part 219 for purposes of Congressionally mandated alcohol and controlled substances testing programs to encompass all employees and agents performing safety-sensitive functions, as described in 49 Code of Federal Regulations 209.301 and 209.303.					
# of Addressees:	1	Overall Date Closed:			
Addressee:	FRA	Open - Unacceptable Response	Date Closed:		
			N/A		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:29 AM

Recommendation Report

Product/Notation Id 46752 / **Accident Date:** 11/30/07 **Issue Date:** 04/02/09
City/State: Chicago, IL **Accident #:** DCA08MR003 **Most Wanted List:** No

On Friday, November 30, 2007, about 11:23 a.m., Amtrak (National Railroad Passenger Corporation) passenger train 371, consisting of one locomotive and three passenger cars, struck the rear of standing Norfolk Southern Railway Company freight train 23M near Chicago, Illinois. The forward portion of the Amtrak locomotive came to rest on top of a container on the rear car of the freight train. Sixty-six passengers and five crewmembers were transported to hospitals; two passengers and one crewmember were subsequently admitted. The weather was clear, and the temperature was 30° F. Estimated damage was \$1,299,000.

Recommendation # :	R-09-001	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Establish uniform signal aspects that railroads must use to authorize a train to enter an occupied block, and prohibit the use of these aspects for any other signal indication.					
# of Addressees:	1	Overall Date Closed: N/A			
Addressee:	FRA	Open - Unacceptable Response	Date Closed: N/A		



Attachment 2 - Rail Recommendations Classified as "Open – Unacceptable Response"

3/19/2018 9:24:29 AM

Recommendation Report

Product/Notation Id 46753 / **Accident Date:** 11/30/07 **Issue Date:** 04/02/09
City/State: Chicago, IL **Accident #:** DCA08MR003 **Most Wanted List:** No

On Friday, November 30, 2007, about 11:23 a.m., Amtrak (National Railroad Passenger Corporation) passenger train 371, consisting of one locomotive and three passenger cars, struck the rear of standing Norfolk Southern Railway Company freight train 23M near Chicago, Illinois. The forward portion of the Amtrak locomotive came to rest on top of a container on the rear car of the freight train. Sixty-six passengers and five crewmembers were transported to hospitals; two passengers and one crewmember were subsequently admitted. The weather was clear, and the temperature was 30° F. Estimated damage was \$1,299,000.

Recommendation # :	R-09-002	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Study the different signal systems for trains, identify ways to communicate more uniformly the meaning of signal aspects across all railroad territories, and require the railroads to implement as many uniform signal meanings as possible.					
# of Addressees:	1	Overall Date Closed:		N/A	
Addressee:	FRA	Open - Unacceptable Response		Date Closed:	N/A



Attachment 2 - Rail Recommendations Classified as "Open - Unacceptable Response"

3/19/2018 9:24:29 AM

Recommendation Report

Product/Notation Id 46754 / Accident Date: 11/30/07 Issue Date: 04/02/09
 City/State: Chicago, IL Accident #: DCA08MR003 Most Wanted List: No

On Friday, November 30, 2007, about 11:23 a.m., Amtrak (National Railroad Passenger Corporation) passenger train 371, consisting of one locomotive and three passenger cars, struck the rear of standing Norfolk Southern Railway Company freight train 23M near Chicago, Illinois. The forward portion of the Amtrak locomotive came to rest on top of a container on the rear car of the freight train. Sixty-six passengers and five crewmembers were transported to hospitals; two passengers and one crewmember were subsequently admitted. The weather was clear, and the temperature was 30° F. Estimated damage was \$1,299,000.

Recommendation # :	R-09-003	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Require that emergency exits on new and remanufactured locomotive cabs provide for rapid egress by cab occupants and rapid entry by emergency responders.					
# of Addressees:	1	Overall Date Closed:			
Addressee:	FRA	Open - Unacceptable Response	Date Closed:		
			N/A		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

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Recommendation Report

Product/Notation Id 46887 / 8133_1 **Accident Date:** 06/22/09 **Issue Date:** 07/13/09
City/State: Washington, D.C., DC **Accident #:** DCA09MR007 **Most Wanted List:** No

On Monday, June 22, 2009, about 4:58 p.m., eastern daylight time, southbound Metrorail train 112 was travelling in a curve when it struck the rear end of train 214 before reaching the Fort Totten station. Train 214 had stopped before entering the station to wait for another train to leave the platform. The striking train was not equipped with onboard event recorders that would have recorded train speed and other parameters. There was no communication between the train operators and the Metrorail Operations Control Center before the collision. During the collision, the lead car of train 112 telescoped and overrode the rear car of train 214 by about 50 feet. Examination of the track and wreckage indicated that the emergency brake on train 112 was applied before impact. The District of Columbia Fire and Emergency Medical Service reported 9 fatalities and transported about 52 persons to local hospitals. Although the NTSB's investigation is ongoing and no determination of probable cause has been reached, investigators have concerns regarding the safety redundancy of WMATA's train control system, which has prompted issuance of this urgent safety recommendation.

Recommendation # :	R-09-007	Overall Status:	Open - Unacceptable Response	Priority:	CLASS I
TO THE FEDERAL TRANSIT ADMINISTRATION: Advise all rail transit operators that have train control systems capable of monitoring train movements to determine whether their systems have adequate safety redundancy if losses in train detection occur. If a system is susceptible to single point failures, urge and verify that corrective action is taken to add redundancy by evaluating track occupancy data on a real-time basis to automatically generate alerts and speed restrictions to prevent train collisions. (Urgent)					
# of Addressees:	1	Overall Date Closed: N/A			
Addressee:	FTA	Open - Unacceptable Response	Date Closed: N/A		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

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Recommendation Report

Product/Notation Id 46761 / Accident Date: 05/28/08 Issue Date: 07/23/09
 City/State: Newton, MA Accident #: DCA08MR007 Most Wanted List: No

On May 28, 2008, about 5:51 p.m., eastern daylight time, westbound Massachusetts Bay Transportation Authority (MBTA) Green Line train 3667, traveling about 38 mph, struck the rear of westbound Green Line train 3681, which had stopped for a red signal. The accident occurred in Newton, Massachusetts, a suburb of Boston. Each train consisted of two light rail trolley cars and carried two crewmembers—a train operator at the front of the lead car and a trail operator in the second car. The operator of the striking train was killed; the other three crewmembers sustained minor injuries. An estimated 185 to 200 passengers were on the two trains at the time of the collision. Of these, four sustained minor injuries, and one was seriously injured. Total damage was estimated to be about \$8.6 million.

Recommendation # :	R-09-011	Overall Status:	Open - Acceptable Response	Priority:	CLASS II
TO 46 US RAIL TRANSIT AGENCIES: Establish a program to identify operators who are at high risk for obstructive sleep apnea or other sleep disorders and require that such operators be appropriately evaluated and treated.					
# of Addressees:	1	Overall Date Closed:		N/A	
Addressee:	Jacksonville Transportation Authority	Open - Unacceptable Response	Date Closed:		N/A



Attachment 2 - Rail Recommendations Classified as "Open - Unacceptable Response"

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Recommendation Report

Product/Notation Id	46872 /	Accident Date:	06/19/09	Issue Date:	03/02/12
City/State:	Cherry Valley, IL	Accident #:	DCA09MR006	Most Wanted List:	No

About 8:36 p.m., central daylight time, on Friday, June 19, 2009, eastbound CN freight train U70691-18, traveling at 36 mph, derailed at a highway/rail grade crossing in Cherry Valley, Illinois. The train consisted of 2 locomotives and 114 cars, 19 of which derailed. All of the derailed cars were tank cars carrying denatured fuel ethanol, a flammable liquid. Thirteen of the derailed tank cars were breached or lost product and caught fire. At the time of the derailment, several motor vehicles were stopped on either side of the grade crossing waiting for the train to pass. As a result of the fire that erupted after the derailment, a passenger in one of the stopped cars was fatally injured, two passengers in the same car received serious injuries, and five occupants of other cars waiting at the highway/rail crossing were injured. Two responding firefighters also sustained minor injuries. The release of ethanol and the resulting fire prompted a mandatory evacuation of about 600 residences within a 1/2-mile radius of the accident site. Monetary damages were estimated to total \$7.9 million.

The NTSB determined that the probable cause of the accident was the washout of the track structure that was discovered about 1 hour before the train's arrival, and CN's failure to notify the train crew of the known washout in time to stop the train because of the inadequacy of the CN's emergency communication procedures. Contributing to the accident was the CN's failure to work with Winnebago County to develop a comprehensive storm water management design to address the previous washouts in 2006 and 2007. Contributing to the severity of the accident was the CN's failure to issue the flash flood warning to the train crew and the inadequate design of the DOT-111 tank cars, which made the cars subject to damage and catastrophic loss of hazardous materials during the derailment.

Recommendation # :	R-12-001	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE UNITED STATES DEPARTMENT OF TRANSPORTATION: Develop a comprehensive storm water drainage assessment program to be conducted jointly by railroads and public entities that ensures the adequate flow of water under both railroad and highway facilities, and require railroads and public entities to coordinate any changes to storm water drainage systems before their implementation.					
# of Addressees:	1	Overall Date Closed: N/A			
Addressee:	DOT	Open - Unacceptable Response	Date Closed: N/A		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

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Recommendation Report

Product/Notation Id 47085 / Accident Date: 04/17/11 Issue Date: 05/10/12
 City/State: Red Oak, IA Accident #: DCA11FR002 Most Wanted List: No

On April 17, 2011, about 6:55 a.m. central daylight time, eastbound BNSF Railway (BNSF) coal train C-BTMCNMO-26, BNSF 9159 East, travelling about 23 mph, collided with the rear end of standing BNSF maintenance-of-way (MOW) equipment train U-BRGCR1-15, BNSF 9470 East, near Red Oak, Iowa. The accident occurred near milepost (MP) 448.3 on main track number two on the Creston Subdivision of the BNSF Nebraska Division. The collision resulted in the derailment of 2 locomotives and 12 cars. As a result of collision forces, the lead locomotive's modular crew cab was detached, partially crushed, and involved in a subsequent diesel fuel fire. Both crewmembers on the striking train were fatally injured. Damage was in excess of \$8.7 million. The National Transportation Safety Board (NTSB) determined that the probable cause of the accident was the failure of the crew of the striking train to comply with the signal indication requiring them to operate in accordance with restricted speed requirements and stop short of the standing train because they had fallen asleep due to fatigue resulting from their irregular work schedules and their medical conditions. Contributing to the accident was the absence of a positive train control system that identifies the rear of a train and stops a following train if a safe braking profile is exceeded. Contributing to the severity of collision damage to the locomotive cab of the striking coal train was the absence of crashworthiness standards for modular locomotive crew cabs.

Recommendation # :	R-12-016	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Require railroads to medically screen employees in safety-sensitive positions for sleep apnea and other sleep disorders.					
# of Addressees:	1	Overall Date Closed:		N/A	
Addressee:	FRA	Open - Unacceptable Response	Date Closed: N/A		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

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Recommendation Report

Product/Notation Id	47089 /	Accident Date:	04/17/11	Issue Date:	05/10/12
City/State:	Red Oak, IA	Accident #:	DCA11FR002	Most Wanted List:	No

On April 17, 2011, about 6:55 a.m. central daylight time, eastbound BNSF Railway (BNSF) coal train C-BTMCNMO-26, BNSF 9159 East, travelling about 23 mph, collided with the rear end of standing BNSF maintenance-of-way (MOV) equipment train U-BRGCR1-15, BNSF 9470 East, near Red Oak, Iowa. The accident occurred near milepost (MP) 448.3 on main track number two on the Creston Subdivision of the BNSF Nebraska Division. The collision resulted in the derailment of 2 locomotives and 12 cars. As a result of collision forces, the lead locomotive's modular crew cab was detached, partially crushed, and involved in a subsequent diesel fuel fire. Both crewmembers on the striking train were fatally injured. Damage was in excess of \$8.7 million. The National Transportation Safety Board (NTSB) determined that the probable cause of the accident was the failure of the crew of the striking train to comply with the signal indication requiring them to operate in accordance with restricted speed requirements and stop short of the standing train because they had fallen asleep due to fatigue resulting from their irregular work schedules and their medical conditions. Contributing to the accident was the absence of a positive train control system that identifies the rear of a train and stops a following train if a safe braking profile is exceeded. Contributing to the severity of collision damage to the locomotive cab of the striking coal train was the absence of crashworthiness standards for modular locomotive crew cabs.

Recommendation # :	R-12-020	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Require the use of positive train control technologies that will detect the rear of trains and prevent rear-end collisions.					
# of Addressees:	1	Overall Date Closed: N/A			
Addressee:	FRA	Open - Unacceptable Response	Date Closed: N/A		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:29 AM

Recommendation Report

Product/Notation Id	47091 /	Accident Date:	04/17/11	Issue Date:	05/10/12
City/State:	Red Oak, IA	Accident #:	DCA11FR002	Most Wanted List:	No

On April 17, 2011, about 6:55 a.m. central daylight time, eastbound BNSF Railway (BNSF) coal train C-BTMCNMO-26, BNSF 9159 East, travelling about 23 mph, collided with the rear end of standing BNSF maintenance-of-way (MOV) equipment train U-BRGCR1-15, BNSF 9470 East, near Red Oak, Iowa. The accident occurred near milepost (MP) 448.3 on main track number two on the Creston Subdivision of the BNSF Nebraska Division. The collision resulted in the derailment of 2 locomotives and 12 cars. As a result of collision forces, the lead locomotive's modular crew cab was detached, partially crushed, and involved in a subsequent diesel fuel fire. Both crewmembers on the striking train were fatally injured. Damage was in excess of \$8.7 million. The National Transportation Safety Board (NTSB) determined that the probable cause of the accident was the failure of the crew of the striking train to comply with the signal indication requiring them to operate in accordance with restricted speed requirements and stop short of the standing train because they had fallen asleep due to fatigue resulting from their irregular work schedules and their medical conditions. Contributing to the accident was the absence of a positive train control system that identifies the rear of a train and stops a following train if a safe braking profile is exceeded. Contributing to the severity of collision damage to the locomotive cab of the striking coal train was the absence of crashworthiness standards for modular locomotive crew cabs.

Recommendation # :	R-12-022	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Revise Title 49 Code of Federal Regulations Part 229 to require crashworthiness performance validation for all new locomotive designs under conditions expected in a collision.					
# of Addressees:	1	Overall Date Closed:	N/A		
Addressee:	FRA	Date Closed:	N/A		
		Overall Status:	Open - Unacceptable Response		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

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Recommendation Report

Product/Notation Id	46773 /	Accident Date:	07/14/09	Issue Date:	05/24/12
City/State:	Bettendorf, IA	Accident #:	DCA09FR009	Most Wanted List:	No

On July 14, 2009, about 2:08 a.m., central daylight time, 1 Dakota, Minnesota & Eastern Railroad (DME) freight train B61-13, consisting of two locomotives and 83 railcars, was operating southbound F under track warrant authority⁴ in non-signalized territory on the main track when it went into Bettendorf Yard via the misaligned north yard hand-operated switch. Event recorder data showed that the train was operating at 25 mph before the DME train's engineer activated the emergency brakes as the train entered the yard. However, the braking action was only able to slow the train to about 21 mph before it struck 19 loaded railcars on yard track No. 3, derailing 4 of those railcars, in addition to derailing 9 railcars and the 2 locomotives on the DME train. The engineer and the conductor on DME train B61-13 sustained fatal injuries.

The north yard hand-operated switch had been left incorrectly lined from the main track onto the yard track by the crew of BNSF Railway local train RCH14274-131 (BNSF local). The collision occurred on the DME Davenport Subdivision, near milepost (MP) 187.8 in Bettendorf, Iowa. Train movements were authorized by track warrants issued by a DME train dispatcher F located in Sioux Falls, South Dakota. The maximum authorized speed for the main track in the Bettendorf area was 25 mph. There was no signal system to govern train movements or convey information regarding the north yard hand-operated switch position.

The NTSB determined that the probable cause of the accident was the BNSF Railway local train RCH14274-131 crew releasing track warrant authority before returning the north yard hand-operated switch to the correct position. Contributing to the accident was the dispatcher for DME, granting track warrant authority to DME train B61-13 without holding a job briefing, which would confirm the accurate positions of all applicable main track switches. Also contributing to the accident was a hand-operated switch position reflector target that could not be observed by the crew of train B61-13 at a sufficient distance to stop the train and avoid the accident.

Recommendation # :	R-12-027	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Require railroads to install, along main lines in non-signalized territory not equipped with positive train control, appropriate technology that warns approaching trains of incorrectly lined main track switches sufficiently in advance to permit stopping.					
# of Addressees:	1	Overall Date Closed:	N/A		
Addressee:	FRA	Open - Unacceptable Response	Date Closed:	N/A	



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:29 AM

Recommendation Report

Product/Notation Id 54653 / Accident Date: 06/24/11 Issue Date: 01/28/13
 City/State: Miriam, NV Accident #: HWY11MH012 Most Wanted List: No

On Friday, June 24, 2011, about 11:19 a.m. Pacific daylight time, a 2008 Peterbilt truck-tractor occupied by a 43-year-old driver was traveling north on US Highway 95 near Miriam, Nevada. The truck-tractor was pulling two empty 2007 side-dump trailers. As it approached an active highway-railroad grade crossing consisting of two cantilever signal masts with flashing lights and two crossing gate arms in the descended position, it failed to stop and struck the left side of Amtrak train no. 5, which was passing through the grade crossing from the northeast. The collision destroyed the truck-tractor and two passenger railcars. The train came to a stop without derailling; however, a fire ensued, engulfing two railcars and damaging a third railcar. The accident killed the truck driver, the train conductor, and four train passengers; 15 train passengers and one crewmember were injured.

The National Transportation Safety Board (NTSB) determines that the probable cause of the Miriam, Nevada, accident was the truck driver's delayed braking and the failure of John Davis Trucking to adequately maintain the brakes on the accident truck. Contributing to the number of fatalities and the severity of injuries was insufficient passenger railcar side impact strength.

Recommendation # :	R-12-041	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Require that passenger railcar doors be designed to prevent fire and smoke from traveling between railcars.					
# of Addressees:	1	Overall Date Closed:		N/A	
Addressee:	FRA	Open - Unacceptable Response	Date Closed:		N/A



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

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Recommendation Report

Product/Notation Id 46975 / 8464 **Accident Date:** 09/30/10 **Issue Date:** 03/08/13
City/State: Two Harbors, MN **Accident #:** DCA10FR009 **Most Wanted List:** No

On September 30, 2010, about 4:05 p.m. central daylight time, a southbound Canadian National Railway freight train collided head on with a northbound Canadian National Railway freight train near Two Harbors, Minnesota. The collision occurred near milepost 13.5 on Canadian National Railway's Iron Range Subdivision. The trains were operating in nonsignaled territory. The northbound train had 118 empty iron ore railcars and had authority to operate on the single main track. The southbound train had 116 railcars loaded with iron ore and did not have authority to operate on the single main track. The crew of the southbound train entered the main track after failing to properly execute an after-arrival track authority. A total of three locomotives and 14 railcars derailed. All five crewmembers on the two trains were injured and transported to hospitals. Four crewmembers were treated and released, one crewmember remained hospitalized for further treatment. Canadian National Railway estimated damages at \$8.1 million.

As a result of its investigation of this accident, the National Transportation Safety Board (NTSB) makes recommendations to the Federal Railroad Administration, Canadian National Railway, the Brotherhood of Locomotive Engineers and Trainmen, the United Transportation Union, Canadian Pacific Railway Limited, Kansas City Southern Railway Company, Norfolk Southern Railroad, and Union Pacific Railroad. The NTSB also reiterates previous recommendations to the Federal Railroad Administration, BNSF Railway, and the American Short Line and Regional Railroad Association. The NTSB also reiterates and reclassifies recommendations to the Federal Railroad Administration.

Recommendation # :	R-13-007	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Require railroads to implement initial and recurrent crew resource management training for train crews.					
# of Addressees:	1	Overall Date Closed: N/A			
Addressee:	FRA	Open - Unacceptable Response	Date Closed: N/A		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:29 AM

Recommendation Report

Product/Notation Id 46977 / **Accident Date:** 09/30/10 **Issue Date:** 03/08/13
City/State: Two Harbors, MN **Accident #:** DCA10FR009 **Most Wanted List:** No

On September 30, 2010, about 4:05 p.m. central daylight time, a southbound Canadian National Railway freight train collided head on with a northbound Canadian National Railway freight train near Two Harbors, Minnesota. The collision occurred near milepost 13.5 on Canadian National Railway's Iron Range Subdivision. The trains were operating in nonsignaled territory. The northbound train had 118 empty iron ore railcars and had authority to operate on the single main track. The southbound train had 116 railcars loaded with iron ore and did not have authority to operate on the single main track. The crew of the southbound train entered the main track after failing to properly execute an after-arrival track authority. A total of three locomotives and 14 railcars derailed. All five crewmembers on the two trains were injured and transported to hospitals. Four crewmembers were treated and released; one crewmember remained hospitalized for further treatment. Canadian National Railway estimated damages at \$6.1 million.

As a result of its investigation of this accident, the National Transportation Safety Board (NTSB) makes recommendations to the Federal Railroad Administration, Canadian National Railway, the Brotherhood of Locomotive Engineers and Trainmen, the United Transportation Union, Canadian Pacific Railway Limited, Kansas City Southern Railway Company, Norfolk Southern Railroad, and Union Pacific Railroad. The NTSB also reiterates previous recommendations to the Federal Railroad Administration, BNSF Railway, and the American Short Line and Regional Railroad Association. The NTSB also reiterates and reclassifies recommendations to the Federal Railroad Administration.

Recommendation # :	R-13-009	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE CANADIAN NATIONAL RAILWAY COMPANY: Discontinue the use of after-arrival track authorities in nonsignaled territory not equipped with positive train control.					
# of Addressees:	1	Overall Date Closed: N/A			
Addressee:	Canadian National Railway	Open - Unacceptable Response	Date Closed: N/A		



Attachment 2 - Rail Recommendations Classified as "Open - Unacceptable Response"

3/19/2018 9:24:30 AM

Recommendation Report

Product/Notation Id 46984 / **Accident Date:** 09/30/10 **Issue Date:** 03/08/13
City/State: Two Harbors, MN **Accident #:** DCA10FR009 **Most Wanted List:** No

On September 30, 2010, about 4:05 p.m. central daylight time, a southbound Canadian National Railway freight train collided head on with a northbound Canadian National Railway freight train near Two Harbors, Minnesota. The collision occurred near milepost 13.5 on Canadian National Railway's Iron Range Subdivision. The trains were operating in nonsignaled territory. The northbound train had 118 empty iron ore railcars and had authority to operate on the single main track. The southbound train had 116 railcars loaded with iron ore and did not have authority to operate on the single main track. The crew of the southbound train entered the main track after failing to properly execute an after-arrival track authority. A total of three locomotives and 14 railcars derailed. All five crewmembers on the two trains were injured and transported to hospitals. Four crewmembers were treated and released, one crewmember remained hospitalized for further treatment. Canadian National Railway estimated damages at \$8.1 million.

As a result of its investigation of this accident, the National Transportation Safety Board (NTSB) makes recommendations to the Federal Railroad Administration, Canadian National Railway, the Brotherhood of Locomotive Engineers and Trainmen, the United Transportation Union, Canadian Pacific Railway Limited, Kansas City Southern Railway Company, Norfolk Southern Railroad, and Union Pacific Railroad. The NTSB also reiterates previous recommendations to the Federal Railroad Administration, BNSF Railway, and the American Short Line and Regional Railroad Association. The NTSB also reiterates and reclassifies recommendations to the Federal Railroad Administration.

Recommendation # :	R-13-016	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO CANADIAN PACIFIC RAILWAY LIMITED, KANSAS CITY SOUTHERN RAILWAY COMPANY, NORFOLK SOUTHERN RAILROAD, AND UNION PACIFIC RAILROAD: Discontinue the use of after-arrival track authorities for train movements in nonsignaled territory not equipped with a positive train control system.					
# of Addressees:	1	Overall Date Closed:	N/A		
Addressee:	Kansas City Southern Railway Company	Open - Unacceptable Response	Date Closed:	N/A	



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:30 AM

Recommendation Report

Product/Notation Id 47142 / Accident Date: 06/24/12 Issue Date: 08/14/13
 City/State: Goodwell, OK Accident #: DCA12MR005 Most Wanted List: No

On Sunday, June 24, 2012, at 10:02 a.m. central daylight time, eastbound Union Pacific Railroad (UP) freight train ZLAH-22 and westbound UP freight train AAMMLX-22 collided head-on while operating on straight track on the UP Pratt subdivision near Goodwell, Oklahoma. Skies were clear, the temperature was 89°F, and visibility was 10 miles. The collision derailed 3 locomotives and 24 cars of the eastbound train and 2 locomotives and 8 cars of the westbound train. The engineer and the conductor of the eastbound train and the engineer of the westbound train were killed. The conductor of the westbound train jumped to safety. During the collision and derailment, several fuel tanks from the derailed locomotives ruptured, releasing diesel fuel that ignited and burned. Damage was estimated at \$14.8 million. The National Transportation Safety Board determines that the probable cause of this accident was the eastbound Union Pacific Railroad train crew's lack of response to wayside signals because of the engineer's inability to see and correctly interpret the signals; the conductor's disengagement from his duties; and the lack of positive train control, which would have stopped the train and prevented the collision regardless of the crew's inaction. Contributing to the accident was a medical examination process that failed to decertify the engineer before his deteriorating vision adversely affected his ability to operate a train safely.

Recommendation # :	R-13-020	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Require more frequent medical certification exams for employees in safety-sensitive positions who have chronic conditions with the potential to deteriorate sufficiently to impair safe job performance.					
# of Addressees:	1	Overall Date Closed:		N/A	
Addressee:	FRA	Open - Unacceptable Response	Date Closed:		N/A



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

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Recommendation Report

Product/Notation Id 47143 / 8431B **Accident Date:** 06/24/12 **Issue Date:** 08/14/13
City/State: Goodwell, OK **Accident #:** DCA12MR005 **Most Wanted List:** No

On Sunday, June 24, 2012, at 10:02 a.m. central daylight time, eastbound Union Pacific Railroad (UP) freight train ZLAH-22 and westbound UP freight train AAMMLX-22 collided head-on while operating on straight track on the UP Pratt subdivision near Goodwell, Oklahoma. Skies were clear, the temperature was 89°F, and visibility was 10 miles. The collision derailed 3 locomotives and 24 cars of the eastbound train and 2 locomotives and 8 cars of the westbound train. The engineer and the conductor of the eastbound train and the engineer of the westbound train were killed. The conductor of the westbound train jumped to safety. During the collision and derailment, several fuel tanks from the derailed locomotives ruptured, releasing diesel fuel that ignited and burned. Damage was estimated at \$14.8 million. The National Transportation Safety Board determines that the probable cause of this accident was the eastbound Union Pacific Railroad train crew's lack of response to wayside signals because of the engineer's inability to see and correctly interpret the signals; the conductor's disengagement from his duties, and the lack of positive train control, which would have stopped the train and prevented the collision regardless of the crew's inaction. Contributing to the accident was a medical examination process that failed to decertify the engineer before his deteriorating vision adversely affected his ability to operate a train safely.

Recommendation # :	R-13-021	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Develop medical certification regulations for employees in safety-sensitive positions that include, at a minimum, (1) a complete medical history that includes specific screening for sleep disorders, a review of current medications, and a thorough physical examination, (2) standardization of testing protocols across the industry, and (3) centralized oversight of certification decisions for employees who fail initial testing; and consider requiring that medical examinations be performed by those with specific training and certification in evaluating medication use and health issues related to occupational safety on railroads. [This recommendation supersedes Safety Recommendations R-02-24 through -26.]					
# of Addressees:	1	Overall Date Closed: N/A			
Addressee:	FRA	Open - Unacceptable Response	Date Closed: N/A		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:30 AM

Recommendation Report

Product/Notation Id 47144 / Accident Date: 06/24/12 Issue Date: 08/14/13
 City/State: Goodwell, OK Accident #: DCA12MR005 Most Wanted List: No

On Sunday, June 24, 2012, at 10:02 a.m. central daylight time, eastbound Union Pacific Railroad (UP) freight train ZLAH-22 and westbound UP freight train AAMMLX-22 collided head-on while operating on straight track on the UP Pratt subdivision near Goodwell, Oklahoma. Skies were clear, the temperature was 89°F, and visibility was 10 miles. The collision derailed 3 locomotives and 24 cars of the eastbound train and 2 locomotives and 8 cars of the westbound train. The engineer and the conductor of the eastbound train and the engineer of the westbound train were killed. The conductor of the westbound train jumped to safety. During the collision and derailment, several fuel tanks from the derailed locomotives ruptured, releasing diesel fuel that ignited and burned. Damage was estimated at \$14.8 million. The National Transportation Safety Board determines that the probable cause of this accident was the eastbound Union Pacific Railroad train crew's lack of response to wayside signals because of the engineer's inability to see and correctly interpret the signals; the conductor's disengagement from his duties; and the lack of positive train control, which would have stopped the train and prevented the collision regardless of the crew's inaction. Contributing to the accident was a medical examination process that failed to decertify the engineer before his deteriorating vision adversely affected his ability to operate a train safely.

Recommendation # :	R-13-022	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Require all information captured by any required recorder to also be recorded in another location remote from the lead locomotive(s), to minimize the likelihood of the information's being unrecoverable as a result of an accident.					
# of Addressees:	1	Overall Date Closed:		N/A	
Addressee:	FRA	Open - Unacceptable Response	Date Closed:		N/A



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:30 AM

Recommendation Report

Product/Notation Id	47148 / 8431B	Accident Date:	06/24/12	Issue Date:	08/14/13
City/State:	Goodwell, OK	Accident #:	DCA12MR005	Most Wanted List:	No

On Sunday, June 24, 2012, at 10:02 a.m. central daylight time, eastbound Union Pacific Railroad (UP) freight train ZLAH-22 and westbound UP freight train AAMMLX-22 collided head-on while operating on straight track on the UP Pratt subdivision near Goodwell, Oklahoma. Skies were clear, the temperature was 89°F, and visibility was 10 miles. The collision derailed 3 locomotives and 24 cars of the eastbound train and 2 locomotives and 8 cars of the westbound train. The engineer and the conductor of the eastbound train and the engineer of the westbound train were killed. The conductor of the westbound train jumped to safety. During the collision and derailment, several fuel tanks from the derailed locomotives ruptured, releasing diesel fuel that ignited and burned. Damage was estimated at \$14.8 million.

The National Transportation Safety Board determines that the probable cause of this accident was the eastbound Union Pacific Railroad train crew's lack of response to wayside signals because of the engineer's inability to see and correctly interpret the signals; the conductor's disengagement from his duties; and the lack of positive train control, which would have stopped the train and prevented the collision regardless of the crew's inaction. Contributing to the accident was a medical examination process that failed to decertify the engineer before his deteriorating vision adversely affected his ability to operate a train safely.

Recommendation # :	R-13-026	Overall Status:	Open - Acceptable Response	Priority:	CLASS II
TO ALL CLASS I RAILROADS: Install in all controlling locomotive cabs and cab car operating compartments crash-and fire-protected inward-and outward-facing audio and image recorders. The devices should have a minimum 12-hour continuous recording capability.					
# of Addressees:	1	Overall Date Closed: N/A			
Addressee:	Union Pacific	Open - Unacceptable Response	Date Closed: N/A		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:30 AM

Recommendation Report

Product/Notation Id 47323 / **Accident Date:** 07/06/13 **Issue Date:** 01/23/14
City/State: Lac Megantic, Quebec, **Accident #:** DCA13SR006 **Most Wanted List:** No
 OF

On July 5, 2013, at 10:45 p.m. eastern daylight time, MMA freight train MMA-002 was proceeding eastbound on the MMA Sherbrooke Subdivision, en route from Montréal, Quebec, to Saint John, New Brunswick, Canada. The train was 4,700 feet long and weighed more than 10,000 tons. The train was composed of 5 head-end locomotives, a special-purpose caboose equipped to remotely control the locomotives, 1 loaded boxcar used as a buffer car, and 72 US Department of Transportation (DOT) Specification 111 general service tank cars (DOT-111) loaded with petroleum crude oil. The waybills described the product in the tank cars as Petroleum Crude Oil, UN1267, Class 3, Packing Group III. The crude oil originated from a tank truck-to-rail car transloading facility in New Town, North Dakota, and was destined for an oil refinery in Saint John, New Brunswick. The Canadian Pacific Railway transported the tank cars from New Town to Montréal, where the train was conveyed to the MMA with the same waybill information.

About 11:00 p.m., the engineer stopped the train at the designated MMA crew change point at milepost 7.40 near Nantes, Quebec. He left the lead locomotive idling and then departed the area, leaving the train unattended on the mainline track. The track had a descending grade of about 1.2 percent toward the town of Lac-Mégantic.

About 11:40 p.m., a nearby resident called the 911 emergency call center to report a fire on the idling locomotive. The local fire department responded, and the MMA dispatched an employee to assist the fire department personnel. About midnight, the responders initiated emergency shutdown procedures on the locomotive and extinguished the fire. The fire department and MMA personnel then departed the location, leaving the train unattended.

Shortly before 1:00 a.m. on July 6, 2013, the unattended train started to move, and it gathered speed, rolling uncontrolled for 7.4 miles down the descending grade into Lac-Mégantic. As the train entered the center of Lac-Mégantic, it was moving well over the authorized speed. The boxcar and 63 loaded crude oil tank cars derailed near the center of Lac-Mégantic. The locomotives separated from the train and came to rest about 1/2 mile east of the derailment.

At least 60 of the 63 derailed DOT-111 tank cars released about 1.6 million gallons of crude oil. Some of the spilled oil ignited immediately. The fire engulfed the derailed cars and the surrounding area. Forty-seven people died as a result of the fire, and nearby structures were destroyed or extensively damaged. The fire was extinguished by noon on July 7, 2013. About 2,000 people evacuated the surrounding area.

Recommendation # :	R-14-006	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Require shippers to sufficiently test and document the physical and chemical characteristics of hazardous materials to ensure the proper classification, packaging, and record-keeping of products offered in transportation.					
# of Addressees:	1	Overall Date Closed:	N/A		
Addressee:	PHMSA	Date Closed:	N/A		
		Overall Status:	Open - Unacceptable Response		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

Recommendation Report

3/19/2018 9:24:30 AM

Product/Notation Id	47315 /	Accident Date:	05/17/13	Issue Date:	05/19/14
City/State:	Bridgeport, CT, CT	Accident #:	DCA13MR003	Most Wanted List:	No

On Friday, May 17, 2013, at 8:01 p.m. eastern daylight time, eastbound Metro-North passenger train 1548, which departed Grand Central Terminal, New York, toward New Haven, Connecticut, derailed at milepost (MP) 53.25 from main track 4 of the New Haven Line Subdivision 7 and was struck by westbound Metro-North passenger train 1581, which had departed New Haven bound for Grand Central Terminal. As a result of the collision, 48 passengers, 2 engineers, and 1 conductor were transported to local hospitals. Metro-North estimated that about 250 passengers were on each train at the time of the accident.

The Metro-North New Haven Line Subdivision 7 runs in an approximate northeast-southwest direction between New York City and New Haven. At the site of the accident, four main tracks are typically in operation. However, between MP48.8 and MP 55.1, along-term track project on main tracks 1 and 3 (the two adjacent northernmost tracks) required all rail traffic to be routed onto main tracks 2 and 4 (the two adjacent southernmost tracks). Each day, about 49 Metro-North passenger trains and 23 Amtrak trains operate over these tracks. Between the months of April and November, two freight trains operate, three times per week, over these tracks; the estimated annual gross tonnage is 5 million gross tons. The maximum authorized speed on the four main tracks in the vicinity of the accident is 70 mph. There were no posted speed restrictions at the time of the accident.

Recommendation # :	R-14-011	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Revise the Track Safety Standards specified in Title 49 Code of Federal Regulations 213.233(b)(3), removing the exemption for high-density commuter railroads and requiring all railroads to comply with these requirements: (1) to traverse each main track by vehicle or inspect each main track on foot at least once every 2 weeks, and (2) to traverse and inspect each siding, either by vehicle or on foot, at least once every month.					
# of Addressees:	1	Overall Date Closed: N/A			
Addressee:	FRA	Open - Unacceptable Response	Date Closed: N/A		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:30 AM

Recommendation Report

Product/Notation Id 47293 / Accident Date: 11/30/12 Issue Date: 08/22/14
 City/State: Paulsboro, NJ Accident #: DCA13MR002 Most Wanted List: No

This report discusses the 2012 accident in which a Consolidated Rail Corporation (Conrail) train derailed while traveling over a moveable bridge in Paulsboro, New Jersey. Three tank cars containing vinyl chloride came to rest in Mantua Creek, of which one was breached and released about 20,000 gallons of vinyl chloride. On that day, 28 residents sought medical attention for possible exposure, and the train crew and many emergency responders were also exposed. Damage estimates were \$451,000 for equipment and about \$30 million for emergency response and remediation.

This report addresses safety issues: training and qualification of train crews for moveable bridge inspection; Conrail safety management; timeliness of hazardous materials communications to first responders; failure of the incident commanders to follow established hazardous materials response protocols; firefighter training and qualifications; inadequacies of emergency planning, emergency preparedness, and public awareness for hazardous materials transported by train; and rail corridor risk management analysis. Safety recommendations to: Conrail, US Department of Transportation, Federal Railroad Administration, Pipeline and Hazardous Materials Safety Administration, Association of American Railroads, American Short Line and Regional Railroad Association, International Association of Fire Chiefs, National Volunteer Fire Council, four New Jersey state agencies, with three reiterated.

Recommendation # :	R-14-014	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE UNITED STATES DEPARTMENT OF TRANSPORTATION: Require railroads transporting hazardous materials through communities to provide emergency responders and local and state emergency planning committees with current commodity flow data and assist with the development of emergency operations and response plans.					
# of Addressees:	1	Overall Date Closed:		N/A	
Addressee:	DOT	Open - Unacceptable Response	Date Closed:		N/A



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

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Recommendation Report

Product/Notation Id 47302 / **Accident Date:** 11/30/12 **Issue Date:** 08/22/14
City/State: Paulsboro, NJ **Accident #:** DCA13MR002 **Most Wanted List:** No

This report discusses the 2012 accident in which a Consolidated Rail Corporation (Conrail) train derailed while traveling over a moveable bridge in Paulsboro, New Jersey. Three tank cars containing vinyl chloride came to rest in Mantua Creek, of which one was breached and released about 20,000 gallons of vinyl chloride. On that day, 28 residents sought medical attention for possible exposure, and the train crew and many emergency responders were also exposed. Damage estimates were \$451,000 for equipment and about \$30 million for emergency response and remediation.

This report addresses safety issues: training and qualification of train crews for moveable bridge inspection; Conrail safety management; timeliness of hazardous materials communications to first responders; failure of the incident commanders to follow established hazardous materials response protocols; firefighter training and qualifications; inadequacies of emergency planning, emergency preparedness, and public awareness for hazardous materials transported by train; and rail corridor risk management analysis. Safety recommendations to: Conrail, US Department of Transportation, Federal Railroad Administration, Pipeline and Hazardous Materials Safety Administration, Association of American Railroads, American Short Line and Regional Railroad Association, International Association of Fire Chiefs, National Volunteer Fire Council, four New Jersey state agencies, with three reiterated.

Recommendation # :	R-14-023	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE ASSOCIATION OF AMERICAN RAILROADS: Update the Hazardous Materials Shipping Descriptions and Emergency Response database to ensure that emergency response information provided for hazardous materials shipments in consistent with and is at least as protective as guidance contained in the Emergency Response Guidebook.					
# of Addressees:	1	Overall Date Closed:	N/A		
Addressee:	Association of American Railroads	Open - Unacceptable Response	Date Closed:	N/A	



Attachment 2 - Rail Recommendations Classified as "Open – Unacceptable Response"

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Recommendation Report

Product/Notation Id 47385 / 8595 Accident Date: 07/17/14 Issue Date: 10/22/14
 City/State: Accident #: DCA14SR002 Most Wanted List: No

As defined by Title 49 Code of Federal Regulations (CFR) 214.7, roadway worker means any employee of a railroad, or of a contractor to a railroad, whose duties include inspection, construction, maintenance or repair of railroad track, bridges, roadway, signal and communication systems, electric traction systems, roadway facilities or roadway maintenance machinery on or near track or with the potential of fouling a track, and flagmen and watchmen/lookouts as defined in this section.

Throughout this special investigation report, the term roadway worker will mean the definition above as well as all engineering employees who are on or near the tracks, regardless of their duties. Railroad and rail transit roadway workers are subject to on-the-job risks and hazards markedly different from those faced by other railroad employees. The jobs of railroad engineers and conductors include risks primarily related to moving trains—derailments, collisions with other trains; the jobs of roadway workers involve hazards that include moving rolling stock and other equipment and vehicles, as well as falls, electrocution, and natural hazards.

Recommendation # :	R-14-045	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION: Work with the Federal Railroad Administration to establish clear guidelines for use by railroads and railroad workers detailing when and where Occupational Safety and Health Administration standards are to be applied.					
# of Addressees:	1	Overall Date Closed:		N/A	
Addressee:	United States Department of Labor, Occupational Safety and Health Administration	Open - Unacceptable Response	Date Closed: N/A		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

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Recommendation Report

Product/Notation Id 47386 / Accident Date: 07/17/14 Issue Date: 10/22/14
 City/State: Accident #: DCA14SR002 Most Wanted List: No

As defined by Title 49 Code of Federal Regulations (CFR) 214.7, roadway worker means any employee of a railroad, or of a contractor to a railroad, whose duties include inspection, construction, maintenance or repair of railroad track, bridges, roadway, signal and communication systems, electric traction systems, roadway facilities or roadway maintenance machinery on or near track or with the potential of fouling a track, and flagmen and watchmen/lookouts as defined in this section.

Throughout this special investigation report, the term roadway worker will mean the definition above as well as all engineering employees who are on or near the tracks, regardless of their duties. Railroad and rail transit roadway workers are subject to on-the-job risks and hazards markedly different from those faced by other railroad employees. The jobs of railroad engineers and conductors include risks primarily related to moving trains—derailments, collisions with other trains; the jobs of roadway workers involve hazards that include moving rolling stock and other equipment and vehicles, as well as falls, electrocution, and natural hazards.

Recommendation # :		R-14-046	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION: Establish an agreement with the Federal Transit Administration to collaborate on any investigation of the fatality of an on-duty rail transit employee.						
# of Addressees:		1	Overall Date Closed:		N/A	
Addressee:	United States Department of Labor, Occupational Safety and Health Administration	Open - Unacceptable Response	Date Closed:		N/A	



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

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Recommendation Report

Product/Notation Id 54716 / Accident Date: 05/28/13 Issue Date: 10/22/14
 City/State: Rosedale, MD Accident #: HWY13MH013 Most Wanted List: No

On May 28, 2013, about 1:59 p.m., a 2003 Mack Granite three-axle roll-off straight truck, operated by Alban Waste, LLC, was traveling northwest on a private road in Rosedale, Maryland, toward a private highway-railroad grade crossing. The grade crossing consisted of two tracks and was marked on each side with a crossbuck sign. The truck was carrying a load of debris to a recycling center located 3.5 miles from the carrier terminal. About the same time, a CSX Transportation Company (CSXT) freight train—which consisted of two locomotives, 31 empty cars, and 14 loaded cars—was traveling southwest at a recorded speed of 49 mph. As the train approached the crossing, the train horn sounded three times. The truck did not stop; and as the train traversed the crossing, it struck the truck on the right side, causing the truck to rotate and overturn before coming to rest on the earthen embankment on the northwest side of the tracks. The first 15 cars of the 45-car train derailed.

Recommendation # :	R-14-048	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Require equivalent levels of reporting for both public and private highway-railroad grade crossings.					
# of Addressees:	1	Overall Date Closed:			
Addressee:	FRA	Open - Unacceptable Response	Date Closed:		
			N/A		



Attachment 2 - Rail Recommendations Classified as "Open – Unacceptable Response"

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Recommendation Report

Product/Notation Id 54718 / Accident Date: 05/28/13 Issue Date: 10/22/14
 City/State: Rosedale, MD Accident #: HWY13MH013 Most Wanted List: No

On May 28, 2013, about 1:59 p.m., a 2003 Mack Granite three-axle roll-off straight truck, operated by Alban Waste, LLC, was traveling northwest on a private road in Rosedale, Maryland, toward a private highway–railroad grade crossing. The grade crossing consisted of two tracks and was marked on each side with a crossbuck sign. The truck was carrying a load of debris to a recycling center located 3.5 miles from the carrier terminal. About the same time, a CSX Transportation Company (CSXT) freight train—which consisted of two locomotives, 31 empty cars, and 14 loaded cars—was traveling southwest at a recorded speed of 49 mph. As the train approached the crossing, the train horn sounded three times. The truck did not stop; and as the train traversed the crossing, it struck the truck on the right side, causing the truck to rotate and overturn before coming to rest on the earthen embankment on the northwest side of the tracks. The first 15 cars of the 45-car train derailed.

Recommendation # :	R-14-050	Overall Status:	Open - Await Response	Priority:	CLASS II
TO THE FIFTY STATES, PUERTO RICO, AND THE DISTRICT OF COLUMBIA: Enact legislation adopting all elements of the Federal Railroad Administration's model law known as the "Adequate Sight Distance at Passive Highway–Rail Grade Crossings Act."					
# of Addressees:	5	Overall Date Closed:	N/A		
Addressee:	State of Alaska	Open - Unacceptable Response	Date Closed:	N/A	
Addressee:	State of Hawaii	Open - Unacceptable Response	Date Closed:	N/A	
Addressee:	State of Illinois	Open - Unacceptable Response	Date Closed:	N/A	
Addressee:	State of Oregon	Open - Unacceptable Response	Date Closed:	N/A	
Addressee:	State of Utah	Open - Unacceptable Response	Date Closed:	N/A	



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

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Recommendation Report

Product/Notation Id	54720 /	Accident Date:	05/28/13	Issue Date:	10/22/14
City/State:	Rosedale, MD	Accident #:	HWY13MH013	Most Wanted List:	No

On May 28, 2013, about 1:59 p.m., a 2003 Mack Granite three-axle roll-off straight truck, operated by Alban Waste, LLC, was traveling northwest on a private road in Rosedale, Maryland, toward a private highway-railroad grade crossing. The grade crossing consisted of two tracks and was marked on each side with a crossbuck sign. The truck was carrying a load of debris to a recycling center located 3.5 miles from the carrier terminal. About the same time, a CSX Transportation Company (CSXT) freight train—which consisted of two locomotives, 31 empty cars, and 14 loaded cars—was traveling southwest at a recorded speed of 49 mph. As the train approached the crossing, the train horn sounded three times. The truck did not stop; and as the train traversed the crossing, it struck the truck on the right side, causing the truck to rotate and overturn before coming to rest on the earthen embankment on the northwest side of the tracks. The first 15 cars of the 45-car train derailed.

Recommendation # :	R-14-052	Overall Status:	Open - Await Response	Priority:	CLASS II
TO THE ASSOCIATION OF AMERICAN RAILROADS AND THE AMERICAN SHORT LINE AND REGIONAL RAILROAD ASSOCIATION: Develop and disseminate to your members a model program for railroads to (1) evaluate the safety of private highway-railroad grade crossings in their territories, including identifying visibility obstructions and other factors that increase the risk of grade crossing collisions; and (2) work with landowners and communities to mitigate that risk.					
# of Addressees:	1	Overall Date Closed:	N/A		
Addressee:	Association of American Railroads	Open - Unacceptable Response	Date Closed:	N/A	



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

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Recommendation Report

Product/Notation Id	47442 /	Accident Date:	04/02/14	Issue Date:	11/24/14
City/State:		Accident #:	DCA14SS005	Most Wanted List:	No

During the time period between May 2013 and March 2014, the National Transportation Safety Board (NTSB) launched investigative teams to five significant accidents on the Metro-North Railroad (Metro-North): (1) the May 17, 2013, derailment and subsequent collision in Bridgeport, Connecticut; (2) the May 28, 2013, employee fatality in West Haven, Connecticut; (3) the July 18, 2013, CSX derailment on Metro-North tracks in The Bronx, New York; (4) the December 1, 2013, derailment in The Bronx, New York; and (5) the March 10, 2014, employee fatality in Manhattan, New York. In combination, these accidents resulted in 6 fatalities, 126 injuries and more than \$28 million in damages. The continued safe operation of Metro-North is vital to New York City and the tri-state area of New York, New Jersey, and Connecticut.

As the NTSB investigations progressed, it became apparent that several organizational factors issues were involved in the accidents. The November 2013 NTSB investigative hearing on the Bridgeport and West Haven accidents (the NTSB hearing) explored the role of Metro-North and the Federal Railroad Administration (FRA) organizational factors in these accidents. The NTSB was not alone in observing that organizational factors were relevant to the series of Metro-North accidents. Subsequent actions by the FRA, which conducted a focused audit, and the Metropolitan Transportation Authority (MTA), which formed a Blue Ribbon Panel (BRP) to review safety and created an MTA Board Safety Committee to monitor safety, have reinforced the need to examine both the role of Metro-North and FRA organizational factors in relation to these five accidents.

This special investigation report discusses all five of the recent Metro-North accidents investigated by the NTSB, examines some of the common elements of these accidents, and addresses the steps that Metro-North, the MTA, and the FRA have taken as a result of these investigations. The report also highlights lessons learned and provides recommendations to Metro-North, MTA, and several other entities to improve railroad safety on Metro-North and elsewhere.

Recommendation # :	R-14-071	Overall Status:	Open - Await Response	Priority:	CLASS II
TO THE ASSOCIATION OF AMERICAN RAILROADS, THE AMERICAN PUBLIC TRANSPORTATION ASSOCIATION, THE AMERICAN SHORT LINE AND REGIONAL RAILROAD ASSOCIATION, THE BROTHERHOOD OF LOCOMOTIVE ENGINEERS, AND THE INTERNATIONAL ASSOCIATION OF SHEET METAL, AIR, RAIL AND TRANSPORTATION WORKERS: Collaborate to develop a model national labor agreement that supports effective programs for addressing sleep disorders and other medical conditions among safety-sensitive train operating personnel.					
# of Addressees:	1	Overall Date Closed:	N/A		
Addressee:	Association of American Railroads	Open - Unacceptable Response	Date Closed:	N/A	



Attachment 2 - Rail Recommendations Classified as "Open – Unacceptable Response"

3/19/2018 9:24:30 AM

Recommendation Report

Product/Notation Id 47312 / Accident Date: 05/17/13 Issue Date: 02/02/15
 City/State: Bridgeport, CT, CT Accident #: DCA13MR003 Most Wanted List: No

On Friday, May 17, 2013, at 6:01 p.m. eastern daylight time, eastbound Metro-North passenger train 1548, which had departed Grand Central Terminal, New York, toward New Haven, Connecticut, derailed at milepost (MP) 53.25 from main track 4 of the New Haven line subdivision 7 in Bridgeport, Connecticut, and was struck by westbound Metro-North passenger train 1581, which had departed New Haven bound for Grand Central Terminal. In the collision, the forward (F-end) or leading end of a passenger railcar of passenger train 1581 struck the trailing or back end (B-end) of a passenger railcar of passenger train 1548. (See Figure 1.) As a result of the collision, 63 passengers, 2 engineers, and 1 conductor were injured. Metro-North estimated that about 250 passengers were on each train at the time of the accident.

The NTSB determined that the probable cause of the derailment was an undetected broken pair of compromise joint bars on the north rail of track 4 on the Metro-North New Haven subdivision at MP 53.25 resulting from: (1) the lack of a comprehensive track maintenance program that prioritized the inspection findings to schedule proper corrective maintenance; (2) the regulatory exemption for high-density commuter railroads from the requirement to traverse the tracks they inspect; and (3) Metro-North's decisions to defer scheduled track maintenance.

Recommendation # :	R-15-001	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Revise Title 49 Code of Federal Regulations (CFR) 238.213 to require the existing forward-end corner post strength requirements for the back-end corner posts of passenger railcars.					
# of Addressees:	1	Overall Date Closed:			
Addressee:	FRA	Open - Unacceptable Response	Date Closed:		
			N/A		



Attachment 2 - Rail Recommendations Classified as "Open – Unacceptable Response"

Recommendation Report

3/19/2018 9:24:30 AM

Product/Notation Id	47313 /	Accident Date:	05/17/13	Issue Date:	02/02/15
City/State:	Bridgeport, CT, CT	Accident #:	DCA13MR003	Most Wanted List:	No

On Friday, May 17, 2013, at 6:01 p.m. eastern daylight time, eastbound Metro-North passenger train 1548, which had departed Grand Central Terminal, New York, toward New Haven, Connecticut, derailed at milepost (MP) 53.25 from main track 4 of the New Haven line subdivision 7 in Bridgeport, Connecticut, and was struck by westbound Metro-North passenger train 1581, which had departed New Haven bound for Grand Central Terminal. In the collision, the forward (F-end) or leading end of a passenger railcar of passenger train 1581 struck the trailing or back end (B-end) of a passenger railcar of passenger train 1548. (See Figure 1.) As a result of the collision, 63 passengers, 2 engineers, and 1 conductor were injured. Metro-North estimated that about 250 passengers were on each train at the time of the accident.

The NTSB determined that the probable cause of the derailment was an undetected broken pair of compromise joint bars on the north rail of track 4 on the Metro-North New Haven subdivision at MP 53.25 resulting from: (1) the lack of a comprehensive track maintenance program that prioritized the inspection findings to schedule proper corrective maintenance; (2) the regulatory exemption for high-density commuter railroads from the requirement to traverse the tracks they inspect; and (3) Metro-North's decisions to defer scheduled track maintenance.

Recommendation # :	R-15-002	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION; Revise Title 49 Code of Federal Regulations Part 238 to incorporate a certificate of construction, similar to the one found at Title 49 Code of Federal Regulations 179.5, and require that the certificate be furnished prior to the in-service date of the railcar.					
# of Addressees:	1	Overall Date Closed: N/A			
Addressee:	FRA	Open - Unacceptable Response	Date Closed: N/A		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:30 AM

Recommendation Report

Product/Notation Id 47520 / 8636 Accident Date: 02/16/15 Issue Date: 04/06/15
 City/State: Mount Carbon, WV Accident #: DCA15FR005 Most Wanted List: No

The National Transportation Safety Board (NTSB) urges the Pipeline and Hazardous Materials Safety Administration (PHMSA) to take action on the safety recommendations issued in this letter. These recommendations are derived from the NTSB's examination of damaged tank cars following the February 16, 2015, derailment of a CSX Transportation crude oil unit train in Mount Carbon, West Virginia, as well as a review of data collected from accidents that occurred in Gogama, Ontario, on February 14, 2015; Galena, Illinois, on March 5, 2015; and Gogama, Ontario, on March 7, 2015. These recommendations address the retrofitting of thermal protection systems for Department of Transportation (DOT) specification DOT-111 tank cars used to transport Class 3 flammable liquids. Based on the unacceptable performance of bare steel tank cars as evidenced in the four accidents listed above, the NTSB is issuing four safety recommendations to PHMSA.

Recommendation # :	R-15-016	Overall Status:	Open - Unacceptable Response	Priority:	CLASS I
TO THE PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION: Require an aggressive, intermediate progress milestone schedule, such as a 20percent yearly completion metric over a 5-year implementation period, for the replacement or retrofitting of legacy DOT-111 and CPC-1232 tank cars to appropriate tank car performance standards, that includes equipping these tank cars with jackets, thermal protection, and appropriately sized pressure relief devices. (Urgent)					
# of Addressees:	1	Overall Date Closed:		N/A	
Addressee:	PHMSA	Open - Unacceptable Response		Date Closed:	
				N/A	



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:30 AM

Recommendation Report

Product/Notation Id 47196 / **Accident Date:** 09/25/13 **Issue Date:** 07/08/15
City/State: Amarillo, TX **Accident #:** DCA13FR013 **Most Wanted List:** No

On September 25, 2013, BNSF Railway train BLACWSP223A struck the rear end of standing BNSF train SLHTLPC223A near Amarillo, Texas. Several cars derailed and fell across the adjacent track. Approaching BNSF westbound train ZWSPSBD724L struck the derailed cars. The engineer and the conductor of one of the trains recalled passing signals warning them of the train ahead. However, the signal at milepost 543.65 was not lit because the bulb had burned out. Had the bulb not been burned out, the signal would have displayed a red aspect, which would have required them to stop the train before proceeding at restricted speed. When they passed this signal, neither crewmember noticed the dark signal. The engineer stated that he thought the dim headlight from the rear end locomotive helper unit was an approaching train on the adjacent track. The conductor thought the headlight had a yellow cast to it and was a wayside signal. Neither crewmember thought the headlight was on the rear of a standing train. Five of the six involved train crewmembers received injuries and were hospitalized. Estimated damage was \$4.4 million. Safety recommendations are made to the Federal Railroad Administration and BNSF Railway.

Recommendation # :	R-15-026	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO FEDERAL RAILROAD ADMINISTRATION: Prohibit the use of a white light as a marking device on the rear of a train.					
# of Addressees:	1	Overall Date Closed: N/A			
Addressee:	FRA	Open - Unacceptable Response	Date Closed: N/A		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:30 AM

Recommendation Report

Product/Notation Id 47197 / 8618 Accident Date: 09/25/13 Issue Date: 07/08/15
 City/State: Amarillo, TX Accident #: DCA13FR013 Most Wanted List: No

On September 25, 2013, BNSF Railway train BLACWSP223A struck the rear end of standing BNSF train SLHTLPC223A near Amarillo, Texas. Several cars derailed and fell across the adjacent track. Approaching BNSF westbound train ZWSPSBD724L struck the derailed cars. The engineer and the conductor of one of the trains recalled passing signals warning them of the train ahead. However, the signal at milepost 543.65 was not lit because the bulb had burned out. Had the bulb not been burned out, the signal would have displayed a red aspect, which would have required them to stop the train before proceeding at restricted speed. When they passed this signal, neither crewmember noticed the dark signal. The engineer stated that he thought the dim headlight from the rear end locomotive helper unit was an approaching train on the adjacent track. The conductor thought the headlight had a yellow cast to it and was a wayside signal. Neither crewmember thought the headlight was on the rear of a standing train. Five of the six involved train crewmembers received injuries and were hospitalized. Estimated damage was \$4.4 million. Safety recommendations are made to the Federal Railroad Administration and BNSF Railway.

Recommendation # :	R-15-027	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO BNSF RAILWAY COMPANY: Discontinue the use of a white light as a marking device on the rear of a train.					
# of Addressees:	1	Overall Date Closed:		N/A	
Addressee:	BNSF Railway Company (formerly Burlington Northern and Santa Fe Railway Company)	Open - Unacceptable Response	Date Closed:	N/A	



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:30 AM

Recommendation Report

Product/Notation Id 47509 / **Accident Date:** 01/12/15 **Issue Date:** 09/30/15
City/State: Washington, DC **Accident #:** DCA15FR004 **Most Wanted List:** No

On Monday, January 12, 2015, about 3:15 p.m. eastern standard time, WMATA Metrorail Yellow Line train 302 stopped after encountering an accumulation of heavy smoke while traveling southbound in a tunnel between the L'Enfant Plaza station and the Potomac River bridge in the District of Columbia.

About 400 passengers were on board the six-car passenger train at the time of the accident. Some passengers self-evacuated from the train, while others were assisted by emergency responders. The smoke originated from an arcing event near the third rail about 2,000 feet south of the L'Enfant Plaza station. Smoke filled the L'Enfant Plaza station causing an evacuation of the station. District of Columbia Fire and Emergency Management Services reported that 86 people were treated and transported from the scene; another 9 passengers self-transported to medical facilities. There was one passenger fatality.

Recommendation # :	R-15-031	Overall Status:	Open - Unacceptable Response	Priority:	CLASS I
TO THE UNITED STATES DEPARTMENT OF TRANSPORTATION: Seek an amendment to Title 45 United States Code Section 1104(3) to list the Washington Metropolitan Area Transit Authority as a commuter authority, thus authorizing the Federal Railroad Administration to exercise regulatory oversight of the Washington Metropolitan Area Transit Authority's rail system. (Urgent)					
# of Addressees:	1	Overall Date Closed:	N/A		
Addressee:	DOT	Date Closed:	N/A		
		Overall Status:	Open - Unacceptable Response		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:30 AM

Recommendation Report

Product/Notation Id 47510 / 8725 **Accident Date:** 01/12/15 **Issue Date:** 09/30/15
City/State: Washington, DC **Accident #:** DCA15FR004 **Most Wanted List:** No

On Monday, January 12, 2015, about 3:15 p.m. eastern standard time, WMATA Metrorail Yellow Line train 302 stopped after encountering an accumulation of heavy smoke while traveling southbound in a tunnel between the L'Enfant Plaza station and the Potomac River bridge in the District of Columbia.

About 400 passengers were on board the six-car passenger train at the time of the accident. Some passengers self-evacuated from the train, while others were assisted by emergency responders. The smoke originated from an arcing event near the third rail about 2,000 feet south of the L'Enfant Plaza station. Smoke filled the L'Enfant Plaza station causing an evacuation of the station. District of Columbia Fire and Emergency Management Services reported that 86 people were treated and transported from the scene; another 9 passengers self-transported to medical facilities. There was one passenger fatality.

Recommendation # :	R-15-032	Overall Status:	Open - Unacceptable Response	Priority:	CLASS I
TO THE UNITED STATES DEPARTMENT OF TRANSPORTATION: After Title 45 United States Code Section 1104(3) is amended to include the Washington Metropolitan Area Transit Authority, direct the Administrator of the Federal Railroad Administration to develop and implement a plan to transition the oversight of the Washington Metropolitan Area Transit Authority's rail system to the Federal Railroad Administration within 6 months. (Urgent)					
# of Addressees:	1	Overall Date Closed:		N/A	
Addressee:	DOT	Open - Unacceptable Response		Date Closed: N/A	



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:30 AM

Recommendation Report

Product/Notation Id 47544 / **Accident Date:** 05/12/15 **Issue Date:** 06/09/16
City/State: Philadelphia, PA **Accident #:** DCA15MR010 **Most Wanted List:** No

About 9:21 p.m. eastern daylight time on May 12, 2015, eastbound Amtrak (National Railroad Passenger Corporation) passenger train 188 derailed at milepost 81.62 in Philadelphia, Pennsylvania. The train had just entered the Frankford Junction curve—where the speed is restricted to 50 mph—at 106 mph. It was dark and 81°F with no precipitation; visibility was 10 miles. As the train entered the curve, the locomotive engineer applied the emergency brakes. Seconds later, the train—one locomotive and seven passenger cars—derailed. There were 245 passengers, 5 on-duty Amtrak employees, and 3 off-duty Amtrak employees on board. Eight passengers were killed, and 185 others were transported to area hospitals.

The NTSB determines that the probable cause of the accident was the engineer's acceleration to 106 mph as he entered a curve with a 50 mph speed restriction, due to his loss of situational awareness likely because his attention was diverted to an emergency situation with another train. Contributing to the accident was the lack of a positive train control system. Contributing to the severity of the injuries were the inadequate requirements for occupant protection in the event of a train overturning.

Recommendation # :	R-16-038	Overall Status:	Open - Await Response	Priority:	CLASS II
TO THE AMERICAN PUBLIC TRANSPORTATION ASSOCIATION AND THE ASSOCIATION OF AMERICAN RAILROADS: Develop criteria for initial and recurrent training for operating crewmembers that reinforce strategies for recognizing and effectively managing multiple concurrent tasks and prolonged, atypical situations to sustain their attention on current and upcoming train operations, and distribute those criteria to your members.					
# of Addressees:	1	Overall Date Closed:		N/A	
Addressee:	Association of American Railroads	Open - Unacceptable Response	Date Closed: N/A		



Attachment 2 - Rail Recommendations Classified as "Open – Unacceptable Response"

3/19/2018 9:24:30 AM

Recommendation Report

Product/Notation Id 56182 / 8620A Accident Date: 08/17/14 Issue Date: 01/24/17
 City/State: Hoxie, AR Accident #: DCA14FR011 Most Wanted List: No

On August 17, 2014, at 2:28 a.m. central daylight time, southbound Union Pacific Railroad (UP) freight train IMASNL-16 (southbound train) collided with northbound UP freight train IQNLPI-17 (northbound train) at milepost 228.6, while traversing the turnout at control point Y 229 on the UP Hoxie subdivision in Hoxie, Arkansas. Going north, the track in the area transitions from a single main track into two main tracks. As a result of the collision, the engineer and the conductor from the southbound train died, and the engineer and the conductor from the northbound train were seriously injured. The southbound train consisted of 2 locomotives and 86 cars; the northbound train consisted of 2 locomotives and 92 cars. The locomotives from both trains derailed and the second locomotive from the northbound train released diesel fuel, resulting in a fire. A total of 55 cars derailed, 41 cars from the southbound train and 14 cars from the northbound train. About 500 people within a 1.5-mile radius of the derailment were evacuated as a precaution. One tank car loaded with alcohol for human consumption breached and burned. The product posed no environmental hazard and emergency responders allowed the product to burn out. Damage was estimated by UP to be \$10.7 million.

The safety issues covered in this report include: fatigue and employee work schedules, medical issues, UP medical rules, automated systems that reset alertness devices, and positive train control.

As a result of the investigation of this accident, the National Transportation Safety Board makes new safety recommendations to the Federal Railroad Administration: BNSF Railway, Canadian National Railway, Canadian Pacific Railway, CSX Transportation, Kansas City Southern Railway, Intercity Railroads, and Commuter Railroads; Class I Railroads; and Union Pacific Railroad. Further, the National Transportation Safety Board reiterates two recommendations to the Federal Railroad Administration.

Recommendation # :	R-16-043	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Require freight railroads to use validated biomathematical fatigue models, similar to the models used by passenger railroads, to develop work schedules that do not pose an excessive risk of fatigue.					
# of Addressees:	1	Overall Date Closed:		N/A	
Addressee:	FRA	Open - Unacceptable Response	Date Closed:		N/A



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:30 AM

Recommendation Report

Product/Notation Id 56183 / Accident Date: 08/17/14 Issue Date: 01/24/17
 City/State: Hoxie, AR Accident #: DCA14FR011 Most Wanted List: No

On August 17, 2014, at 2:28 a.m. central daylight time, southbound Union Pacific Railroad (UP) freight train IMASNL-16 (southbound train) collided with northbound UP freight train IQNLPI-17 (northbound train) at milepost 228.6, while traversing the turnout at control point Y 229 on the UP Hoxie subdivision in Hoxie, Arkansas. Going north, the track in the area transitions from a single main track into two main tracks. As a result of the collision, the engineer and the conductor from the southbound train died, and the engineer and the conductor from the northbound train were seriously injured. The southbound train consisted of 2 locomotives and 86 cars; the northbound train consisted of 2 locomotives and 92 cars. The locomotives from both trains derailed and the second locomotive from the northbound train released diesel fuel, resulting in a fire. A total of 55 cars derailed, 41 cars from the southbound train and 14 cars from the northbound train. About 500 people within a 1.5-mile radius of the derailment were evacuated as a precaution. One tank car loaded with alcohol for human consumption breached and burned. The product posed no environmental hazard and emergency responders allowed the product to burn out. Damage was estimated by UP to be \$10.7 million.

The safety issues covered in this report include: fatigue and employee work schedules, medical issues, UP medical rules, automated systems that reset alertness devices, and positive train control.

As a result of the investigation of this accident, the National Transportation Safety Board makes new safety recommendations to the Federal Railroad Administration; BNSF Railway, Canadian National Railway, Canadian Pacific Railway, CSX Transportation, Kansas City Southern Railway, Intercity Railroads, and Commuter Railroads; Class I Railroads; and Union Pacific Railroad. Further, the National Transportation Safety Board reiterates two recommendations to the Federal Railroad Administration.

Recommendation # :	R-16-044	Overall Status:	Open - Unacceptable Response	Priority:	CLASS II
TO THE FEDERAL RAILROAD ADMINISTRATION: Develop and enforce medical standards that railroad employees in safety-sensitive positions diagnosed with sleep disorders must meet to be considered fit for duty.					
# of Addressees:	1	Overall Date Closed:		N/A	
Addressee:	FRA	Open - Unacceptable Response	Date Closed:		N/A



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

Recommendation Report

3/19/2018 9:24:30 AM

Product/Notation Id 56184 / 8620A Accident Date: 08/17/14 Issue Date: 01/24/17
 City/State: Hoxie, AR Accident #: DCA14FR011 Most Wanted List: No

On August 17, 2014, at 2:28 a.m. central daylight time, southbound Union Pacific Railroad (UP) freight train IMASNL-16 (southbound train) collided with northbound UP freight train IQNLP1-17 (northbound train) at milepost 228.6, while traversing the turnout at control point Y 229 on the UP Hoxie subdivision in Hoxie, Arkansas. Going north, the track in the area transitions from a single main track into two main tracks. As a result of the collision, the engineer and the conductor from the southbound train died, and the engineer and the conductor from the northbound train were seriously injured. The southbound train consisted of 2 locomotives and 86 cars; the northbound train consisted of 2 locomotives and 92 cars. The locomotives from both trains derailed and the second locomotive from the northbound train released diesel fuel, resulting in a fire. A total of 55 cars derailed, 41 cars from the southbound train and 14 cars from the northbound train. About 500 people within a 1.5-mile radius of the derailment were evacuated as a precaution. One tank car loaded with alcohol for human consumption breached and burned. The product posed no environmental hazard and emergency responders allowed the product to burn out. Damage was estimated by UP to be \$10.7 million.

The safety issues covered in this report include: fatigue and employee work schedules, medical issues, UP medical rules, automated systems that reset alertness devices, and positive train control.

As a result of the investigation of this accident, the National Transportation Safety Board makes new safety recommendations to the Federal Railroad Administration; BNSF Railway, Canadian National Railway, Canadian Pacific Railway, CSX Transportation, Kansas City Southern Railway, Intercity Railroads, and Commuter Railroads; Class I Railroads; and Union Pacific Railroad. Further, the National Transportation Safety Board reiterates two recommendations to the Federal Railroad Administration.

Recommendation # :	R-16-045	Overall Status:	Open - Await Response	Priority:	CLASS II
TO BNSF RAILWAY, CANADIAN NATIONAL RAILWAY, CANADIAN PACIFIC RAILWAY, CSX TRANSPORTATION, KANSAS CITY SOUTHERN RAILWAY, NORFOLK SOUTHERN RAILWAY, INTERCITY RAILROADS, AND COMMUTER RAILROADS: Review and revise as necessary your medical rules, standards, or protocols to ensure you are informed of any diagnosed sleep disorders that employees in safety-sensitive positions must report and, when an employee makes such a report, perform periodic evaluations to ensure the condition is appropriately treated and the employee is fit for duty.					
# of Addressees:	3	Overall Date Closed:			
Addressee:	Alaska Railroad Corporation	Open - Unacceptable Response	Date Closed:		
Addressee:	North County Transit District	Open - Unacceptable Response	Date Closed:		
Addressee:	Virginia Railway Express	Open - Unacceptable Response	Date Closed:		



Attachment 2 - Rail Recommendations Classified as "Open -- Unacceptable Response"

3/19/2018 9:24:30 AM

Recommendation Report

Product/Notation Id 56185 / Accident Date: 08/17/14 Issue Date: 01/24/17
 City/State: Hoxie, AR Accident #: DCA14FR011 Most Wanted List: No

On August 17, 2014, at 2:28 a.m. central daylight time, southbound Union Pacific Railroad (UP) freight train IMASNL-16 (southbound train) collided with northbound UP freight train IQNLPI-17 (northbound train) at milepost 228.6, while traversing the turnout at control point Y 229 on the UP Hoxie subdivision in Hoxie, Arkansas. Going north, the track in the area transitions from a single main track into two main tracks. As a result of the collision, the engineer and the conductor from the southbound train died, and the engineer and the conductor from the northbound train were seriously injured. The southbound train consisted of 2 locomotives and 86 cars; the northbound train consisted of 2 locomotives and 92 cars. The locomotives from both trains derailed and the second locomotive from the northbound train released diesel fuel, resulting in a fire. A total of 55 cars derailed, 41 cars from the southbound train and 14 cars from the northbound train. About 500 people within a 1.5-mile radius of the derailment were evacuated as a precaution. One tank car loaded with alcohol for human consumption breached and burned. The product posed no environmental hazard and emergency responders allowed the product to burn out. Damage was estimated by UP to be \$10.7 million.

The safety issues covered in this report include: fatigue and employee work schedules, medical issues, UP medical rules, automated systems that reset alertness devices, and positive train control.

As a result of the investigation of this accident, the National Transportation Safety Board makes new safety recommendations to the Federal Railroad Administration; BNSF Railway, Canadian National Railway, Canadian Pacific Railway, CSX Transportation, Kansas City Southern Railway, Intercity Railroads, and Commuter Railroads; Class I Railroads; and Union Pacific Railroad. Further, the National Transportation Safety Board reiterates two recommendations to the Federal Railroad Administration.

Recommendation # :	R-16-046	Overall Status:	Open - Await Response	Priority:	CLASS II
TO CLASS I RAILROADS: Revise your scheduling practices for train crews and implement science-based tools, such as validated biomathematical models, to reduce start time variability that results in irregular work-rest cycles and fatigue.					
# of Addressees:	1	Overall Date Closed:	N/A		
Addressee:	Union Pacific	Open - Unacceptable Response	Date Closed:	N/A	

Attachment 2 - Rail Recommendations Classified as "Open – Unacceptable Response"

Total Number of Recommendations for Recommendation Report: 47

Attachment 3 - Recommendations classified as “Open – Unacceptable Response” that are related to the 2017-2018 NTSB Most Wanted List of Safety Improvements

Increase Implementation of Collision Avoidance Technologies

Rec #	Status	Text
R-09-007	Open—Unacceptable Response	TO THE FEDERAL TRANSIT ADMINISTRATION: Advise all rail transit operators that have train control systems capable of monitoring train movements to determine whether their systems have adequate safety redundancy if losses in train detection occur. If a system is susceptible to single point failures, urge and verify that corrective action is taken to add redundancy by evaluating track occupancy data on a real-time basis to automatically generate alerts and speed restrictions to prevent train collisions. (Urgent)
R-12-020	Open—Unacceptable Response	TO THE FEDERAL RAILROAD ADMINISTRATION: Require the use of positive train control technologies that will detect the rear of trains and prevent rear-end collisions.
R-12-027	Open—Unacceptable Response	TO THE FEDERAL RAILROAD ADMINISTRATION: Require railroads to install, along main lines in nonsignaled territory not equipped with positive train control, appropriate technology that warns approaching trains of incorrectly lined main track switches sufficiently in advance to permit stopping.
R-13-009	Open—Unacceptable Response	TO THE CANADIAN NATIONAL RAILWAY COMPANY: Discontinue the use of after-arrival track authorities in nonsignaled territory not equipped with positive train control.
R-13-016	Open—Unacceptable Response	TO CANADIAN PACIFIC RAILWAY LIMITED, KANSAS CITY SOUTHERN RAILWAY COMPANY, NORFOLK SOUTHERN RAILROAD, AND UNION PACIFIC RAILROAD: Discontinue the use of after-arrival track authorities for train movements in nonsignaled territory not equipped with a positive train control system.

Attachment 3 – Recommendations classified as “Open – Unacceptable Response” that are related to the 2017-2018 NTSB Most Wanted List of Safety Improvements

Improve Rail Transit Safety Oversight

Rec #	Status	Text
R-15-031	Open—Unacceptable Response	TO THE UNITED STATES DEPARTMENT OF TRANSPORTATION: Seek an amendment to Title 45 <i>United States Code</i> section 1104(3) to list the Washington Metropolitan Area Transit Authority as a commuter authority, thus authorizing the Federal Railroad Administration to exercise regulatory oversight of the Washington Metropolitan Area Transit Authority's rail system. (Urgent)
R-15-032	Open—Unacceptable Response	TO THE UNITED STATES DEPARTMENT OF TRANSPORTATION: After Title 45 <i>United States Code</i> section 1104(3) is amended to include the Washington Metropolitan Area Transit Authority, direct the Administrator of the Federal Railroad Administration to develop and implement a plan to transition the oversight of the Washington Metropolitan Area Transit Authority's rail system to the Federal Railroad Administration within 6 months. (Urgent)

Attachment 3 - Recommendations classified as “Open – Unacceptable Response” that are related to the 2017-2018 NTSB Most Wanted List of Safety Improvements

End Alcohol and Other Drug Impairment in Transportation

Rec #	Status	Text
R-00-002	Open—Unacceptable Response	TO THE FEDERAL RAILROAD ADMINISTRATION: Develop, then periodically publish, an easy-to-understand source of information for train operating crewmembers on the hazards of using specific medications when performing their duties.
R-00-003	Open—Unacceptable Response	TO THE FEDERAL RAILROAD ADMINISTRATION: Establish and implement an educational program targeting train operating crewmembers that, at a minimum, ensures that all crewmembers are aware of the source of information described in R-00-2 regarding the hazards of using specific medications when performing their duties.
R-00-004	Open—Unacceptable Response	TO THE FEDERAL RAILROAD ADMINISTRATION: Establish, in coordination with the US Dept. of Transportation, the Federal Motor Carrier Safety Administration, the Federal Transit Administration, and the US Coast Guard, comprehensive toxicological testing requirements for an appropriate sample of fatal highway, railroad, transit, and marine accidents to ensure the identification of the role played by common prescription and over-the-counter medications. Review and analyze the results of such testing at intervals not to exceed every 5 years.
R-08-007	Open—Unacceptable Response	TO THE FEDERAL RAILROAD ADMINISTRATION: Revise the definition of covered employee under [Title] 49 <i>Code of Federal Regulations</i> Part 219 for purposes of Congressionally mandated alcohol and controlled substances testing programs to encompass all employees and agents performing safety-sensitive functions, as described in [Title] 49 <i>Code of Federal Regulations</i> 209.301 and 209.303.

Attachment 3 - Recommendations classified as "Open – Unacceptable Response" that are related to the 2017-2018 NTSB Most Wanted List of Safety Improvements

Reduce Fatigue-Related Accidents

Rec #	Status	Text
R-12-016	Open—Unacceptable Response	TO THE FEDERAL RAILROAD ADMINISTRATION: Require railroads to medically screen employees in safety-sensitive positions for sleep apnea and other sleep disorders.
R-13-021	Open—Unacceptable Response	TO THE FEDERAL RAILROAD ADMINISTRATION: Develop medical certification regulations for employees in safety-sensitive positions that include, at a minimum, (1) a complete medical history that includes specific screening for sleep disorders, a review of current medications, and a thorough physical examination, (2) standardization of testing protocols across the industry, and (3) centralized oversight of certification decisions for employees who fail initial testing; and consider requiring that medical examinations be performed by those with specific training and certification in evaluating medication use and health issues related to occupational safety on railroads. [This recommendation supersedes Safety Recommendations R-02-24 through -26.]

Attachment 3 - Recommendations classified as "Open – Unacceptable Response" that are related to the 2017-2018 NTSB Most Wanted List of Safety Improvements

Require Medical Fitness

Rec #	Status	Text
R-00-002	Open—Unacceptable Response	TO THE FEDERAL RAILROAD ADMINISTRATION: Develop, then periodically publish, an easy-to-understand source of information for train operating crewmembers on the hazards of using specific medications when performing their duties.
R-12-016	Open—Unacceptable Response	TO THE FEDERAL RAILROAD ADMINISTRATION: Require railroads to medically screen employees in safety-sensitive positions for sleep apnea and other sleep disorders.
R-13-020	Open—Unacceptable Response	TO THE FEDERAL RAILROAD ADMINISTRATION: Require more frequent medical certification exams for employees in safety-sensitive positions who have chronic conditions with the potential to deteriorate sufficiently to impair safe job performance.
R-13-021	Open—Unacceptable Response	TO THE FEDERAL RAILROAD ADMINISTRATION: Develop medical certification regulations for employees in safety-sensitive positions that include, at a minimum, (1) a complete medical history that includes specific screening for sleep disorders, a review of current medications, and a thorough physical examination, (2) standardization of testing protocols across the industry, and (3) centralized oversight of certification decisions for employees who fail initial testing; and consider requiring that medical examinations be performed by those with specific training and certification in evaluating medication use and health issues related to occupational safety on railroads. (This recommendation supersedes Safety Recommendations R-02-24 through -26.)

Attachment 3 - Recommendations classified as "Open – Unacceptable Response" that are related to the 2017-2018 NTSB Most Wanted List of Safety Improvements

Strengthen Occupant Protections

Rec #	Status	Text
R-09-003	Open—Unacceptable Response	TO THE FEDERAL RAILROAD ADMINISTRATION: Require that emergency exits on new and remanufactured locomotive cabs provide for rapid egress by cab occupants and rapid entry by emergency responders.
R-12-022	Open—Unacceptable Response	TO THE FEDERAL RAILROAD ADMINISTRATION: Revise Title 49 <i>Code of Federal Regulations</i> Part 229 to require crashworthiness performance validation for all new locomotive designs under conditions expected in a collision.
R-12-041	Open—Unacceptable Response	TO THE FEDERAL RAILROAD ADMINISTRATION: Require that passenger railcar doors be designed to prevent fire and smoke from traveling between railcars.
R-15-001	Open—Unacceptable Response	TO THE FEDERAL RAILROAD ADMINISTRATION: Revise Title 49 <i>Code of Federal Regulations (CFR)</i> 238.213 to require the existing forward-end corner post strength requirements for the back-end corner posts of passenger railcars.

Attachment 3 - Recommendations classified as "Open - Unacceptable Response" that are related to the 2017-2018 NTSB Most Wanted List of Safety Improvements

Expand Recorder Use to Enhance Safety

Rec #	Status	Text
R-13-022	Open—Unacceptable Response	TO THE FEDERAL RAILROAD ADMINISTRATION: Require all information captured by any required recorder to also be recorded in another location remote from the lead locomotive(s), to minimize the likelihood of the information's being unrecoverable as a result of an accident.

**Attachment 4—Rail Recommendations Classified as
“Closed—Unacceptable Response”**

Attachment 4 is of significant volume (302 pages) and is therefore posted online at govinfo.gov (the Government Publishing Office's standards-compliant preservation repository) at <https://www.govinfo.gov/content/pkg/CPRT-115HPRT30305/pdf/CPRT-115HPRT30305.pdf>.

**WRITTEN STATEMENT OF JUAN D. REYES III
CHIEF COUNSEL
OFFICE OF CHIEF COUNSEL
FEDERAL RAILROAD ADMINISTRATION
U.S. DEPARTMENT OF TRANSPORTATION**

Before the
Committee on Transportation and Infrastructure,
Subcommittee on Railroads, Pipelines, and Hazardous Materials
United States House of Representatives

“Oversight of Positive Train Control Implementation in the United States”

February 15, 2018

Chairman Denham, Ranking Member Capuano, and Members of the Subcommittee:

Thank you for inviting me to discuss the Federal Railroad Administration’s (FRA) oversight of positive train control (PTC) implementation in the United States. In light of the recent tragic passenger rail incidents, much of the nation’s time and attention has been rightly focused on ensuring that all critical safety measures are in place within our nation’s rail system. Safety is the FRA’s top priority. Our mission at the FRA is to enable the safe, reliable, and efficient movement of people and goods for a strong America, now and in the future. The men and women of FRA execute this important mission every day. Under the leadership of Secretary Elaine L. Chao, FRA executes this objective through developing and enforcing safety regulations, promoting non-regulatory safety activities, investing in rail services and infrastructure, facilitating national and regional rail planning, and conducting research and development to advance innovative technology solutions.

PTC will represent the most fundamental change in rail safety technologies since the introduction of Automatic Train Control in the 1920s. PTC is a processor-based/communication-based train control system designed to prevent certain train accidents. This technology is capable of automatically controlling train speeds and movements should a train operator fail to take appropriate action for the conditions at hand. For example, PTC can force a train to a stop before it passes a signal displaying a stop indicator, or before diverging on an improperly aligned switch, thereby averting a potential collision.

Currently, 41 railroads are required to implement a PTC system, including 7 Class I freight railroads, 30 commuter and intercity passenger railroads including (Amtrak), and 4 short line and

terminal railroads.¹ These systems are being implemented on approximately 60,000 miles of the 140,000-mile railroad network.

I. Positive Train Control Systems

As first mandated by the Rail Safety Improvement Act of 2008, each Class I railroad and each entity providing regularly scheduled, intercity or commuter rail passenger service must implement an FRA-certified PTC system on:

- its main line over which 5 million or more gross tons of annual traffic and poison- or toxic-by-inhalation hazardous materials are transported, and
- its main line over which intercity or commuter rail service is regularly provided.

Per Federal statute and regulations, PTC systems must be designed to prevent train-to-train collisions, over-speed derailments, incursions into established work zone limits, and the movement of a train through a main line switch in the improper position. Railroads are primarily implementing the following PTC systems in the United States: (1) the Interoperable Electronic Train Management System (I-ETMS), which is the predominant system being implemented by Class I railroads; (2) the Advanced Civil Speed Enforcement System (ACSES II), which is being implemented by most railroads operating on the Northeast Corridor; and (3) Enhanced Automatic Train Control (E-ATC), which is being implemented by six intercity passenger or commuter railroads. Each of these PTC systems must be interoperable, meaning the locomotives of any host railroad and tenant railroad operating on the same main line will communicate with and respond to the PTC system, including uninterrupted movements over property boundaries.²

II. Safety Benefits of PTC Technology

The improvement in safety provided by PTC technology comes with significant costs, both in terms of immediate acquisition (industry expenditures will exceed \$14 billion for PTC system implementation)³ and increased operations and maintenance costs (estimated at approximately 15-20% of capital costs per year).

¹ For purposes of this total, please note that in instances where a host freight railroad is implementing a PTC system solely because of one or more tenant railroads that provide commuter rail transportation on the host railroad's main line, FRA counts that as one railroad.

² See Title 49 United States Code (U.S.C.) § 20157(a)(2)(A)(i)(I), (a)(2)(D), (i)(3); Title 49 Code of Federal Regulations (CFR) §§ 236.1003, 236.1011(a)(3).

³ See Association of American Railroads, *Positive Train Control*, at 2 (March 2017), <https://www.aar.org/BackgroundPapers/Positive%20Train%20Control.pdf>.

III. Legislative History

A. Rail Safety Improvement Act of 2008

On October 16, 2008, the Rail Safety Improvement Act of 2008 (RSIA) was enacted, establishing the PTC system implementation mandate and the original December 31, 2015 deadline.⁴ As directed by RSIA, FRA issued regulations specifying the essential technical functionalities of PTC systems and FRA PTC certification criteria.⁵

B. Positive Train Control Enforcement and Implementation Act of 2015

Approximately two months before the original PTC implementation deadline of December 31, 2015, the House and Senate overwhelmingly passed the Positive Train Control Enforcement and Implementation Act of 2015 (PTCEI Act). The legislation was signed into law on October 29, 2015.⁶ The PTCEI Act extended the deadline for full implementation of PTC systems from December 31, 2015, to at least December 31, 2018.

The PTCEI Act *requires* FRA to grant a railroad a deadline extension to a date no later than December 31, 2020, if a railroad submits a written request for an extension that demonstrates it has met the statutory criteria⁷ under 49 U.S.C. § 20157(a)(3)(B):

- **Hardware** – Installed, by December 31, 2018, *all* PTC system hardware required for system implementation consistent with railroad’s PTC Implementation Plan (PTCIP);
- **Spectrum** – Acquired, by December 31, 2018, all spectrum necessary for implementation of the railroad’s PTC system;
- **Employee Training** – Completed the employee training required under 49 CFR part 236, subpart I for all applicable personnel in any territory, or segment thereof, where the PTC system is currently being operated in revenue service demonstration (RSD) or revenue service;
- **Advanced Testing and/or Implementation:**
 - For Class I railroads and Amtrak, the railroad has implemented a PTC system or initiated FRA-approved RSD on the majority of territories (e.g., subdivisions or districts) or route miles the railroad owns or controls that are required to have operations governed by a PTC system;

⁴ Pub. L. No. 110-432, § 104(a), 122 Stat. 4848 (Oct. 16, 2008).

⁵ See 49 CFR part 236, subpart I.

⁶ Pub. L. No. 114-73, 129 Stat. 568, 576–82 (Oct. 29, 2015), *amending* 49 U.S.C. § 20157.

⁷ See 49 U.S.C. § 20157(a)(3)(A)–(D); 49 CFR § 1.89.

- For other railroads (i.e., not Class I railroads or Amtrak), the railroad has initiated FRA-approved RSD on at least one territory that is required to have operations governed by a PTC system, or met any other criteria established by FRA;
- Included in its PTCIP an alternative schedule and sequence for implementing a PTC system as soon as practicable, but no later than December 31, 2020; and
- Certified to FRA in writing that it will be in full compliance with 49 U.S.C. § 20157 on or before the deadline in its proposed alternative schedule and sequence.⁸

Among other requirements, the PTCEI Act also required each railroad subject to the statutory mandate to submit a Revised PTCIP to FRA by January 27, 2016, and mandated that FRA conduct reviews, at least annually, to ensure that each railroad is complying with its PTCIP, including any FRA-approved amendments.⁹

C. Fixing America's Surface Transportation Act

Following enactment of the PTCEI Act, FRA encouraged railroads to fully implement PTC systems by December 31, 2018, despite the statutory provision that allows an extension up to 24 additional months. However, the Fixing America's Surface Transportation (FAST) Act subsequently enacted on December 4, 2015, explicitly prohibits FRA from requiring a railroad to submit a PTCIP with a December 31, 2018, deadline for full PTC system implementation.¹⁰ As such, the FAST Act authorizes a railroad to submit a plan for implementation with the only deadline being December 31, 2020. If a railroad meets all statutory criteria required for a deadline extension, the PTCEI Act requires the Department to approve a railroad's request for an extension to complete full PTC system implementation as soon as practicable but no later than December 31, 2020. The FAST Act also removed FRA's authority to approve or disapprove the PTCIPs submitted to FRA in January 2016 pursuant to the PTCEI Act.¹¹

IV. Enforcement of the PTC Implementation Mandate

A. Future PTC Enforcement Actions

FRA is authorized to assess monetary civil penalties against any railroad that fails to implement a PTC system by the applicable statutory deadline.¹² FRA may not assess a civil penalty against a railroad that fails to implement a PTC system by December 31, 2018, but

⁸ 49 U.S.C. § 20157(a)(3)(B)(i)–(vii); 49 CFR § 1.89.

⁹ 49 U.S.C. § (a)(1)–(2), (c)(2).

¹⁰ Pub. L. No. 114-94, § 11315(d), 129 Stat. 1312, 1675 (Dec. 4, 2015), *amending* 49 U.S.C. § 20157(g).

¹¹ *See* 49 U.S.C. § 20157(g)(4)(A)(i)–(ii).

¹² 49 U.S.C. § 20157(e); 49 CFR §§ 1.89, 236.1005(b)(7).

obtains an extension to the December 31, 2018 deadline to a date no later than December 31, 2020.¹³

In general, FRA's civil penalty schedule recommends, as guidance, a \$16,000 civil penalty for a railroad's failure to timely complete PTC system implementation on a track segment where a PTC system is required.¹⁴ For any violation of a Federal rail safety statute, regulation, or order under FRA's authority, however, the statutory minimum civil penalty FRA may assess is \$853, and the ordinary statutory maximum civil penalty is \$27,904.¹⁵ FRA may assess a civil penalty for each day the non-compliance continues, but FRA may elect to take enforcement action on a one-time basis or each month, quarter, year, or other interval of time during which the non-compliance continues.¹⁶

With respect to future enforcement action, FRA is currently considering all options, within the framework established by Congress, and will determine what type of enforcement action will be most effective and appropriate under the circumstances, in order to ensure such action compels a railroad to fully implement its PTC system as efficiently and safely as possible.

B. Past PTC Enforcement Actions

As mandated by the PTCEI Act, beginning calendar year 2016, FRA must conduct compliance reviews at least annually to verify whether each railroad is complying with its PTCIP.¹⁷ FRA is authorized to assess civil penalties against any railroad that fails to complete the end-of-year implementation milestones the railroad established in its PTCIP, including the railroad's end-of-2016 and end-of-2017 milestones for PTC hardware installation, spectrum acquisition, and employee training.¹⁸

Twelve Closed Cases and Two Open Cases

For the first time since the RSIA, in June and July 2017, FRA issued Notices of Probable Violation against (i) seven railroads that failed to complete hardware installation milestones they scheduled to complete during calendar year 2016 in their PTCIP¹⁹ and (ii) seven railroads that failed to submit a timely Annual PTC Progress Report (Form FRA F 6180.166, OMB Control

¹³ See 49 U.S.C. § 20157(a)(3)(A)–(D) (describing the extension request process and the revised deadlines).

¹⁴ See 49 CFR part 236, appendix A, subpart I.

¹⁵ See 82 Fed. Reg. 16127 (Apr. 3, 2017).

¹⁶ See 49 U.S.C. § 21301(a).

¹⁷ 49 U.S.C. § 20157(c)(2).

¹⁸ 49 U.S.C. § 20157(a)(2)(D), (e)(2).

¹⁹ See 49 U.S.C. § 20157(a)(2)(D), (e)(2).

No. 2130-0553) to FRA by the statutory March 31, 2017, deadline.²⁰ Twelve railroads have paid or, at a minimum, agreed to pay the civil penalty amount and the other two cases are still being negotiated with the railroads.

V. FRA Efforts to Urge Timely Implementation of PTC Systems

A. Outreach

During calendar year 2017, FRA continued to take action to ensure that railroads implement PTC systems in a timely and safe manner. For example, FRA sent letters of concern to railroads and certain state officials regarding certain railroads' failure to complete end-of-2016 hardware installation milestones²¹ and railroads that had installed less than 50 percent of all hardware required for their PTC systems as of December 31, 2016.²² FRA sent letters to the state departments of transportation (DOT) of Illinois, Indiana, Maryland, New Jersey, Tennessee, and Texas and the state DOTs and state governors of California, Florida, Indiana, Maryland, Massachusetts, New Jersey, New Mexico, New York, Tennessee, and Texas.

On December 27, 2017, ahead of the one-year deadline for PTC implementation, Secretary Chao issued a letter, to all Class I railroads, intercity passenger railroads, and commuter railroads, stressing the urgency and importance of safely implementing PTC systems in the upcoming year and meeting the statutory deadline. Since December 2017, FRA leadership met with the executive leadership and technical teams of each railroad subject to the statutory mandate to help ensure PTC systems are being implemented as efficiently as possible, discuss any challenges the railroads continue to experience, and the railroads' plans for compliance with the statutory mandate.

In addition, FRA continues to provide technical assistance throughout all phases of PTC development and implementation by providing lessons learned guidance and other technical

²⁰ See 49 U.S.C. § 20157(c)(1), (e)(1); 49 CFR § 236.1009(a)(5).

²¹ The recipients of letters about missed end-of-2016 milestone were: Amtrak; Belt Railway Company of Chicago; BNSF Railway; Canadian National Railway; Canadian Pacific Railway; Capital Metropolitan Transportation Authority; CSX Transportation, Inc.; Kansas City Southern Railway; Maryland Area Regional Commuter; Nashville Regional Transportation Authority / Nashville and Eastern Railroad; New Jersey Transit; Norfolk Southern Railway; Northeast Illinois Regional Commuter Railroad (Metra); Northern Indiana Commuter Transportation District; Terminal Railroad Association of St. Louis; and Union Pacific Railroad.

²² The recipients of letters about lack of hardware installation progress were: Altamont Corridor Express; Belt Railway Company of Chicago; Canadian National Railway; Capital Metropolitan Transportation Authority; Central Florida Rail Corridor; Denton County Transportation Authority; Long Island Rail Road; Maryland Area Regional Commuter; Massachusetts Bay Transportation Authority; Metro-North Commuter Railroad; Nashville Regional Transportation Authority / Nashville and Eastern Railroad; New Jersey Transit; New Mexico Rail Runner Express; Northern Indiana Commuter Transportation District; South Florida Regional Transportation Authority; Trinity Railway Express; and Terminal Railroad Association of St. Louis.

assistance through quarterly meetings with high-risk commuter railroads to help address their issues with implementing PTC systems. FRA participates, in and provides technical support to, several industry working groups, including the Association of American Railroad's ACSES II Working Group, the American Public Transportation Association's (APTA) I-ETMS Working Group for commuter railroads, and the railroad-led E-ATC Working Group.

In support of PTC Research and Development (R&D), FRA has provided technical support for railroads' development of their PTC systems, including I-ETMS, ACSES II, E-ATC, and the Incremental Train Control System. In addition, in cooperation with individual railroads, as well as APTA, AAR, and the American Short Line and Regional Railroad Association committees, FRA is supporting, through a combination of funding and technical support, approximately 10 PTC-related research projects.

B. Grant Funding and Financial Assistance

Since 2009, FRA awarded approximately \$728 million in grant funding to support railroads' implementation of PTC systems. FRA staff also supported the Federal Transit Administration with its evaluation and selection of approximately \$197 million in PTC grant funds to 17 commuter and intercity passenger railroads and state and local governments for installation of PTC systems, which were announced on May 31, 2017. The sources of the approximately \$925 million in grant funding are:

- \$475 million from FRA's High-Speed Intercity Passenger Rail Grant Program;
- \$86 million from FRA's Railroad Safety Technology Grant Program;
- \$51 million in American Recovery and Reinvestment Act grant funding to Amtrak;
- \$116 million in annual capital grant funding to Amtrak (as of November 2017); and
- \$197 million in FAST Act funding.

PTC implementation is also an eligible project cost under both the Transportation and Infrastructure Finance and Innovation Act (TIFIA) and the Railroad Rehabilitation and Improvement Financing (RRIF) loan programs. The Department's Build America Bureau signed two loans, \$162 million TIFIA and \$220 million RRIF, with the Massachusetts Bay Transportation Authority on December 8, 2017, which provide \$382 million for PTC system implementation. In May 2015, the Department issued a \$967 million RRIF loan to the Metropolitan Transportation Authority for the implementation of PTC systems on the Metro-North Commuter Railroad and Long Island Rail Road.

Approximately \$31 billion is currently available for lending under the RRIF program. Lending authority under the TIFIA program is approximately \$22 billion; however, this figure is subject to available subsidy budget authority and the levels of risk associated with future loans. In considering the loans for PTC-related projects, a total amount of \$1.349 billion has been obligated since 2011.

C. PTC Staffing and Personnel

FRA staffing to support railroads' implementation of PTC systems consists of both full-time civil service government positions and contractor support. Dedicated civil service positions total 15, including a staff director, PTC specialists, a project manager, a senior scientific technical advisor, an engineer, a transportation analyst, and a trial attorney. In addition, there are 6 civil service positions providing part-time support to address specific issues. Two PTC positions are currently open; recruitment is in process, but the unique expertise and skills needed are difficult to find.

FRA understands that throughout 2018, there will be an increase in railroads' requests for FRA approval of Requests for Amendments to PTCIPs, to conduct PTC field testing and conduct revenue service demonstration, and thereafter more railroads will submit PTC Safety Plans to FRA for review and approval, in order to obtain PTC System Certification. To address these needs in a manner that supports accelerated implementation timelines, FRA has increased its PTC workforce through hiring and training, and initiated two contracts to provide additional technical assistance.

VI. Railroads' Progress Towards Meeting Statutory Deadline

FRA interprets "full implementation" to mean that an FRA-certified,²³ interoperable PTC system—including all hardware, software, and other components—has been fully installed and is in operation on all route miles required to have operations governed by a PTC system under 49 U.S.C. § 20157.²⁴ Full implementation requires that all controlling locomotives shall be equipped with a fully operative and functioning onboard PTC apparatus, including the

²³ To date, based on these railroads' PTC Safety Plans, FRA has issued conditional PTC System Certification for the I-ETMS systems of BNSF Railway, Canadian Pacific Railway, CSX Transportation, Inc., Norfolk Southern Railway, Southern California Regional Rail Authority (Metrolink), and Union Pacific Railroad, and for Amtrak's and the Southeastern Pennsylvania Transportation Authority's ACSES II systems.

²⁴ The PTCEI Act recognizes that certain PTC system failures (e.g. initialization failures, cut outs, and malfunctions) will occur during the period specified in the statute, but a railroad must both operate at an equivalent or greater level of safety than the level of safety achieved immediately prior to the use or implementation of the PTC system and comply with certain safety measures during any PTC system failures. See 49 U.S.C. § 20157(j).

controlling locomotives of each railroad subject to the statutory mandate and each tenant railroad operating on a PTC-equipped track segment, except for a railroad's controlling locomotives that qualify for an exception under 49 CFR § 236.1006. The statutory mandate and FRA's implementing regulations also require a PTC system to be interoperable, meaning the locomotives of any host railroad and tenant railroad operating on the same main line will communicate with and respond to the PTC system, including uninterrupted movements over property boundaries.²⁵

Under this definition of "full implementation," FRA anticipates that few, if any, of the 41 railroads currently subject to the statutory mandate will have fully implemented a PTC system by December 31, 2018. Some railroads, most notably BNSF Railway, Union Pacific Railroad, Southeastern Pennsylvania Transportation Authority, and the Southern California Regional Rail Authority (Metrolink), will have an FRA-certified PTC system in operation on their own locomotives on all route miles required under 49 U.S.C. § 20157, on or before December 31, 2018. However, it is unlikely that all controlling locomotives of tenant railroads operating on these PTC-equipped railroad properties will be capable of operating with the host railroad's PTC system by that date.

VII. Challenges

During FRA's meetings with the leadership of the 41 railroads subject to the statutory mandate, railroads commonly conveyed the following ongoing challenges:

- There is a limited number of PTC system vendors and suppliers, all of which are significantly resource-constrained and serving all 41 railroads and their tenant railroads;
- As reliability and stability of PTC systems is still immature, railroads are experiencing significant technical issues with both PTC system hardware and PTC system software that often take considerable time to diagnose and resolve, impacting current operations;
- Host railroads noted that many tenant railroads that operate on main lines requiring PTC system implementation have made variable, and often unknown, progress equipping locomotives with operational PTC technology, while some tenant railroads report that their host railroads are not providing opportunity for testing;
- Railroads have only recently begun testing PTC systems for interoperability;

²⁵ See 49 U.S.C. § 20157(a)(2)(A)(i)(I), (a)(2)(D), (i)(3); 49 CFR §§ 236.1003, 236.1011(a)(3).

- Many commuter railroads stated that negotiating legal agreements with certain vendors and suppliers often took multiple years to complete, given various insurance, liability, and State law issues; and
- Railroads noted concern about FRA's approval review and approval cycle, given the surge in submissions requiring FRA approval in 2018.

VIII. Conclusion

PTC implementation is a top priority of the Department and FRA. Railroads' successful implementation of PTC systems is an important safety initiative for FRA. It is also an important innovation for the future of rail transportation. Given the complexity of these systems, it is imperative that railroads, suppliers, and governing bodies prioritize and focus their attention on meeting this year's Congressional deadline. Over the last ten weeks, FRA leadership and PTC technical staff have conferred with all 41 PTC railroads individually, with the vast majority of these meetings occurring in-person here in Washington. FRA has engaged in candid dialogue with these railroads for several years, but the recent meetings have allowed each railroad's leadership to share PTC lessons learned, obstacles overcome and still remaining, and plans to either comply with the mandate or qualify for an extension by December 31, 2018. Many of the railroads have expressed optimism about meeting this year's deadline. Yet, FRA acknowledges that challenges remain for railroads and their suppliers.

FRA believes that the railroads are prioritizing PTC implementation and that, with limited exceptions, a majority of the 41 railroads subject to the mandate will be able to comply with the statutory requirements for an extension by the end of this calendar year.

I appreciate the committee's interest in our Nation's infrastructure and, particularly, your assistance to the FRA in ensuring railroads implement this rail-safety technology in a timely manner in accordance with the laws and extensions enacted by Congress.

Thank you, Mr. Chairman, for the opportunity to testify. I am happy to answer any questions.

“Oversight of Positive Train Control Implementation in the United States”

Thursday, February 15, 2018, 10:00 a.m.

2167 Rayburn House Office Building

Washington, D.C.

Questions for the Record

Submitted on behalf of Subcommittee Chairman Jeff Denham (CA-10)

1. **What are Federal Railroad Administration (FRA)’s plans and schedule to provide guidance for host and tenant railroads?**

On February 10, 2017, FRA issued guidance to the Association of American Railroads (AAR), the American Public Transportation Association (APTA), and the American Short Line and Regional Railroad Association regarding certain responsibilities of host railroads and tenant railroads concerning implementation of positive train control (PTC) systems. FRA, *Host Railroad Positive Train Control System Certification—Host/Tenant Relationships and Responsibilities* (Feb. 10, 2017), <https://www.fra.dot.gov/eLib/details/L18592>.

During the first six weeks of 2018, FRA met with the executive leadership of each of the 41 railroads subject to the statutory mandate to help ensure PTC systems are being implemented as efficiently as possible; discuss any challenges that railroads continue to experience, including host railroad and tenant railroad issues; and railroads’ plans for compliance with the statutory mandate.

FRA plans to hold industry-wide conferences that focus on topics related to the statutory deadline of December 31, 2018, for full implementation of PTC systems; the statutory criteria necessary to qualify for an “alternative schedule” (i.e., a deadline beyond December 31, 2018, but no later than December 31, 2020, to complete certain non-hardware, operational aspects of PTC system implementation); and the statutory process railroads must follow to obtain FRA’s approval of a railroad’s alternative schedule. *See* Title 49 United States Code (U.S.C.) § 20157(a)(3)(A)–(D).

In addition, FRA will continue to participate in, and provide technical support to, several industry working groups, including AAR’s Advanced Civil Speed Enforcement System II Working Group, APTA’s Interoperable Electronic Train Management System Working Group for commuter railroads, and the railroad-led Enhanced Automatic Train Control Working Group. The working groups enable railroads, PTC system suppliers, and FRA to discuss technical issues, lessons learned, best practices, and various ongoing challenges.

2. **The Consolidated Appropriations Act of 2017 provided \$218 million for FRA Safety and Operations, which is \$5 million more than the requested amount, to fund staff for PTC implementation. Please provide a list of staff positions and vacancies eligible for this funding.**

FRA's PTC program consists of technical and programmatic staff and contractors, many of whom are dedicated to PTC on a full-time basis and a subset that supports the program on a part-time basis (while also performing other duties). This team currently includes 28 Full Time Equivalent (FTE) positions, as detailed below:

- Full Time FRA Technical Staff & Contractors (14 FTE): 1 Staff Director of the PTC Division (retiring during Quarter 2 of 2018), 2 senior test monitors, 8 PTC specialists (including 2 specialists that were hired in Quarter 1 of 2018), 1 software engineer, and 2 technical contractors.
- Full Time FRA Programmatic Staff & Contractors (7 FTE): 1 attorney, 1 program analyst, 1 project manager (who joined during Quarter 1 of 2018), 1 project management contractor, and 3 data analyst contractors.
- Part Time FRA Technical & Programmatic Staff (approx. 7 FTE): 1 senior scientist, 1 Staff Director of the Signal & Train Control (S&TC) Division, 1 Staff Director of the Passenger Rail Division (and PTC Task Force manager), 2 S&TC engineers, 1 attorney, and 1 contractor that provides PTC Safety Plan reviews on a task-order basis (average 2.5 FTE).

FRA is expanding its PTC team to approximately 35+ FTE in preparation for the increased workload in 2018 and beyond, in the following manner:

- To replace the PTC Staff Director who is retiring in Quarter 2 of 2018, the current S&TC Staff Director will take on the duties of both positive train control and signal & train control. Two new supervisory positions are being advertised to support the staff director, one to focus full time on PTC and one to focus full time on S&TC.
- One headquarters PTC specialist position will be advertised in Quarter 2 of 2018 to support PTC Safety Plan reviews.
- Three new contract positions are currently being procured to expand the PTC programmatic team, including one technical project manager for PTC Safety Plan reviews and two additional data analysts to support various aspects of the PTC program, including the review of requests for amendments to railroads' PTC Implementation Plans.
- An additional procurement is currently underway for a further set of contractors to support PTC Safety Plan review, with the skill set capable of reviewing a PTC Safety Plan in its entirety.

Finally, members from FRA's Office of Railroad Safety and Office of Chief Counsel will serve on a newly created PTC Board to establish and monitor staff-level priorities, direct agency resources, and facilitate efficient resolution of railroads' technical issues.

3. **What is the process for railroads to seek an extension, when do they need to apply by, what's the review timeline, and what specific requirements would need to be met?**

The Statutory Process and Requirements

The Positive Train Control Enforcement and Implementation Act of 2015 (PTCEI Act) extended the original PTC system implementation deadline from December 31, 2015, to December 31, 2018.¹ In addition, the PTCEI Act permits railroads to request “an alternative schedule and sequence”—that is, a deadline beyond December 31, 2018, but no later than December 31, 2020.² The PTCEI Act *requires* FRA to approve a railroad’s alternative schedule if a railroad submits a written notification to FRA and demonstrates to FRA that the railroad has met the following statutory criteria under 49 U.S.C. § 20157(a)(3)(B):

- **Hardware** – Installed, by December 31, 2018, *all* PTC system hardware that will be installed for PTC system implementation consistent with the governing PTC Implementation Plan (PTCIP);
- **Spectrum** – Acquired, by December 31, 2018, all spectrum necessary for implementation of the railroad’s PTC system;
- **Employee Training** – Completed the employee training required under 49 CFR part 236, subpart I for all applicable personnel in any territory, or segment thereof, where the PTC system is currently being operated in revenue service demonstration (RSD) or revenue service;
- **Advanced Testing and/or Implementation:**
 - For Class I railroads and Amtrak, the railroad has implemented a PTC system or initiated RSD on the majority of territories (e.g., subdivisions or districts) or route miles the railroad owns or controls that are required to have operations governed by a PTC system;
 - For other railroads (i.e., not Class I railroads or Amtrak), the railroad has initiated RSD on at least one territory that is required to have operations governed by a PTC system, or met any other criteria established by FRA;
- Included in the PTCIP an alternative schedule and sequence for implementing a PTC system as soon as practicable, but no later than December 31, 2020; and
- Certified to FRA in writing that it will be in full compliance with 49 U.S.C. § 20157 on or before the deadline in the proposed alternative schedule and sequence.³

The Statutory Timeline

The PTCEI Act provides that a railroad may submit its written request for FRA’s approval of an alternative schedule as soon as it meets the statutory criteria set forth under 49 U.S.C.

¹ See Rail Safety Improvement Act of 2008, Pub. L. No. 110-432, § 104(a), 122 Stat. 4848 (Oct. 16, 2008), as amended by the Positive Train Control Enforcement and Implementation Act of 2015, Pub. L. No. 114-73, 129 Stat. 568, 576–82 (Oct. 29, 2015), and the Fixing America’s Surface Transportation Act, Pub. L. No. 114-94, § 11315(d), 129 Stat. 1312, 1675 (Dec. 4, 2015). See also 49 U.S.C. § 20157.

² 49 U.S.C. § 20157(a)(2)(B), (a)(3)(A)–(D).

³ 49 U.S.C. § 20157(a)(3)(B)(i)–(vii), (a)(3)(C)–(D); 49 CFR § 1.89.

§ 20157(a)(3)(B) and can demonstrate to FRA, in its written request, that it has met the statutory criteria.⁴ The PTCEI Act does not establish a deadline by which railroads must request FRA's approval of an alternative schedule and sequence.⁵ The PTCEI Act specifically provides that, if a railroad submits a written request for FRA's approval of an alternative schedule, the December 31, 2018, deadline is automatically extended until the date on which FRA approves or denies a railroad's alternative schedule, if such date is later than December 31, 2018.⁶ If FRA approves a railroad's alternative schedule, the deadline for implementation of a PTC system on that railroad's required main lines is the date specified in the alternative schedule, which may be no later than December 31, 2020.⁷

Not later than 90 days from receipt of a railroad's written request for FRA's approval of an alternative schedule, FRA must approve the railroad's alternative schedule if the railroad meets the statutory criteria and notify the railroad of the decision in writing.⁸ In the interim, within 45 days of receipt of a railroad's written request, FRA must provide the railroad a written notification of any deficiencies that would prevent approval of the railroad's alternative schedule and an opportunity to correct the deficiencies before the 90-day period expires.⁹ FRA will comply with the PTCEI Act's mandated review and decision deadlines.

4. **Please explain certain definitions and how they are being used in regards to PTC implementation,**
 - **“complete” - Is complete being interpreted by the FRA as installed; installed and tested; or installed, tested, and interoperable?**
 - **“safety critical” - Is a business decision to reduce the number of a FRA measured item (ex. locomotive, tower) considered safety critical? What would your agency require to verify or audit a business decision?**

I. Full Implementation

FRA interprets “full implementation”¹⁰ to mean that an FRA-certified and interoperable PTC system—including all hardware, software, and other components—has been fully installed and is in operation on all route miles required to have operations governed by a PTC system under 49 U.S.C. § 20157.¹¹ The statutory mandate and FRA's implementing regulations require a PTC system to be interoperable.¹²

⁴ 49 U.S.C. § 20157(a)(3)(A).

⁵ 49 U.S.C. § 20157(a)(3)(A)–(D).

⁶ 49 U.S.C. § 20157(a)(3)(D)(i).

⁷ 49 U.S.C. § 20157(a)(3)(D)(ii).

⁸ 49 U.S.C. § 20157(a)(3)(C)(i).

⁹ 49 U.S.C. § 20157(a)(3)(C)(ii).

¹⁰ See, e.g., 49 U.S.C. § 20157(a)(3)(B)(v); 49 CFR § 236.1005(b)(7); 79 Fed. Reg. 49693, 49706 (Aug. 22, 2014).

¹¹ See, e.g., 49 U.S.C. § 20157(a)(1)–(3), (e)–(h), (i)(3); 49 CFR part 236, subpart I. The PTCEI Act, however, recognizes that certain PTC system failures (e.g., initialization failures, cut outs, and malfunctions) will occur after the statutory implementation deadline, but a railroad must both operate at an equivalent or greater level of safety than the level of safety achieved immediately prior to the use or implementation of the PTC system and comply with certain safety measures during any PTC system failures. See 49 U.S.C. § 20157(j).

¹² See 49 U.S.C. § 20157(a)(2)(A)(i)(I), (a)(2)(D), (i)(3); 49 CFR §§ 236.1003, 236.1011(a)(3).

II. “Safety Critical”

With respect to the second question, each railroad subject to the statutory mandate shall maintain its PTCIP “to reflect the railroad’s most recent PTC deployment plans until all PTC system deployments required under [49 CFR part 236, subpart I] are complete.”¹³ To make certain changes to a PTCIP, a railroad must submit a request for amendment (RFA) to FRA under the RFA procedures in 49 CFR § 236.1021, and the FRA Associate Administrator for Railroad Safety must approve the RFA in writing. A proposed change to an end-of-year hardware installation milestone or the total amount of hardware required for PTC system implementation constitutes a “[m]odification of a safety critical element of a PTC system” under 49 CFR § 236.1021, requiring the submission of an RFA to FRA and FRA’s review and approval.¹⁴

To make changes to the quantities railroads provided in their PTCIPs per the PTCEI Act, FRA requires only that the railroad submit an RFA under 49 CFR § 236.1021 for FRA approval.¹⁵ With respect to Chairman Denham’s inquiry about the type of evidence FRA requires to verify such business decisions, FRA’s regulations require, in terms of evidence, only “[t]he reasons for each modification” and “[e]ach modification’s effect on PTC system safety.”¹⁶ An explanation of the reason(s) for the proposed reduction in the quantity of PTC system hardware and/or the quantity of controlling locomotives and the effect on PTC system safety would be sufficient for this particular type of a request for amendment to a PTCIP. FRA has approved these requests for amendments to PTCIPs to date.

¹³ 49 CFR §§ 236.1011(f), 236.1021; *see also* 49 U.S.C. § 20157(a)(2)(C).

¹⁴ *See* 49 CFR § 236.1021(h)(3); 49 U.S.C. § 20157(a)(2)(C); 75 Fed. Reg. 2598, 2645 (Jan. 15, 2010) (“FRA recognizes the potential for technological improvements that may modify the number and types of [wayside interface units (WIUs)] required. FRA also recognizes that during testing and installation, it may be discovered that additional WIU installations may be necessary. In either case, the railroad will be required to submit an RFA in accordance with § 236.1021 [T]his final rule already provides for corrections in inventory count by submission of an RFA with the revised count.”).

¹⁵ 49 CFR § 236.1021(a), (d); *see also* 49 U.S.C. § 20157(a)(2)(A), (a)(2)(C).

¹⁶ 49 CFR § 236.1021(d).

Submitted on behalf of Ranking Member Peter DeFazio (OR-04)

1. Are commuter railroads eligible for PTC funding through the Consolidated Rail Infrastructure and Safety Improvement grant programs?

Most commuter railroads are eligible to apply as a public agency for Consolidated Rail Infrastructure and Safety Improvement (CRISI) grants for projects to implement positive train control. However, as the Notice of Funding Opportunity for this grant program published in the Federal Register on February 21, 2018, states, FRA is prohibited in 49 U.S.C. § 24405(f) from providing CRISI grants for commuter rail passenger transportation (as defined in 49 U.S.C. § 24102(3)). FRA's interpretation of this restriction is informed by the language in 49 U.S.C. § 24407. FRA's primary intent in funding passenger rail projects will be to make reasonable investments in intercity passenger rail transportation. Such projects may be located on shared corridors where commuter rail passenger transportation and/or freight rail also benefit from the project.

2. You mentioned in response to a Members' question that Brightline in Florida is currently operating PTC but you mentioned that it is ATC. Automatic Train Control (ATC) is not the same as PTC. ATC does not have the same safety functionalities that PTC has. Can you clarify your comment for the record?

All Aboard Florida's Brightline is implementing the Enhanced Automated Train Control (E-ATC) system to meet the statutory and regulatory requirements for PTC system implementation. The system builds upon an existing ATC system with modifications to add other "enhanced" features or systems to achieve the core required functionalities of PTC systems, given that the statute and FRA's implementing regulations require a PTC system to be designed to prevent train-to-train collisions, over-speed derailments, incursions into established work zone limits, and the movement of a train through a main line switch in the improper position.¹⁷

3. You stated in your testimony that PTC would be helpful in dark territory. However, the PTC requirements apply to main lines where toxic-by-inhalation or poisonous-by-inhalation hazardous materials are transported and where passengers are transported, or about 54,000 route miles. In other words, it will not be operable on ALL main lines in the United States. Two of the Class I railroads informed us that the PTC system will be blank in these areas. These are areas where crewmembers could still encounter a misaligned switch, so what will be done to ensure safety in these non-PTC, non-signaled areas of the country?

Railroads are implementing PTC systems in dark territory locations only if the main line is subject to the statutory PTC implementation mandate.¹⁸ Railroad operations and rail safety in the remaining dark territory locations are governed by other FRA safety regulations, including FRA's track safety standards (49 CFR part 213), railroad operating practices related to switches

¹⁷ See, e.g., 49 U.S.C. § 20157(i)(5); 49 CFR § 236.1005.

¹⁸ 49 U.S.C. § 20157(a)(1).

(49 CFR part 218), and other regulatory requirements as applicable. FRA performs inspections of these locations and monitors rail safety.

4. **The National Transportation Safety Board (NTSB) recently issued an urgent safety recommendation to FRA in response to the Union Pacific accident in Granger, Wyoming, and CSX accident in Cayce, South Carolina, which states that FRA should “issue an Emergency Order directing railroads to require that when signal suspensions are in effect and a switch has been reported relined for a main track, the next train or locomotive to pass the location must approach the switch location at restricted speed. After the switch position is verified, the main crew must report to the dispatcher that the switch is correctly lined for the main track before trains are permitted to operate at maximum-authorized speed. (R-18-005) (Urgent).”**

– **Will FRA issue this Emergency Order?**

FRA is considering whether issuing an Emergency Order or taking other alternative action would be the best method to achieve the goal of the NTSB’s recommendation.

– **What actions is FRA taking to address this urgent recommendation?**

FRA has consulted with the NTSB regarding this recommendation and, as noted above, FRA is considering the NTSB’s recommendation to determine what measures are necessary to ensure safety when railroads temporarily suspend signal systems to implement PTC technology. Once FRA has made that determination, FRA will inform the NTSB of FRA’s plan of action.

5. **The Rail Safety Improvement Act of 2008 (P.L. 110-432, Division A) required: “(a) IN GENERAL.— Not later than 1 year after enactment of the Railroad Safety Enhancement Act of 2008, the Secretary of Transportation shall prescribe standards, guidance, regulations, or orders governing the development, use, and implementation of rail safety technology in dark territory, in arrangements not defined in section 20501 or otherwise not covered by Federal standards, guidance, regulations, or orders that ensure the safe operation of such technology, such as— “(1) switch position monitoring devices or indicators; “(2) radio, remote control, or other power-assisted switches; “(3) hot box, high water, or earthquake detectors; “(4) remote control locomotive zone limiting devices; “(5) slide fences; “(6) grade crossing video monitors; “(7) track integrity warning systems; or “(8) other similar rail technologies, as determined by the Secretary.”**

– **What is FRA doing to implement the 2008 congressional mandate?**

After an initial delay because of the statutorily-mandated PTC rulemaking, FRA’s Railroad Safety Advisory Committee (RSAC) began work on this rule in 2011. However, because the technology implementation plans expected to be in railroads’ risk reduction and system safety programs (also mandated by the Rail Safety Improvement Act of 2008) will likely obviate the need for this rulemaking, FRA has prioritized the completion of the Risk Reduction Program and

the System Safety Program rules (discussed in response to question no. 6 below) in advance of this rulemaking.

6. *The Rail Safety Improvement Act of 2008 required*“(a) **IN GENERAL.—(1) PROGRAM REQUIREMENT.—Not later than 4 years after the date of enactment of the Rail Safety Improvement Act of 2008, the Secretary of Transportation, by regulation, shall require each railroad carrier that is a Class I railroad, a railroad carrier that has inadequate safety performance (as determined by the Secretary), or a railroad carrier that provides intercity rail passenger or commuter rail passenger transportation— (A) to develop a railroad safety risk reduction program under subsection (d) that systematically evaluates railroad safety risks on its system and manages those risks in order to reduce the numbers and rates of railroad accidents, incidents, injuries, and fatalities; (B) to submit its program, including any required plans, to the Secretary for review and approval; and (C) to implement the program and plans approved by the Secretary.”**

– **What is FRA doing to implement the 2008 congressional mandate?**

FRA initiated three rulemakings to meet this mandate. The System Safety Program (SSP) rulemaking will satisfy the mandate for passenger railroads, and the Risk Reduction Program (RRP) rulemaking will satisfy the mandate for Class I railroads and railroads with inadequate safety records. A Fatigue Risk Management Plan (FRMP) rulemaking will satisfy the mandate for railroads required to comply with the RRP or SSP rules to include fatigue management plans in a safety risk reduction program.

FRA published the SSP final rule on August 12, 2016. The rule requires each commuter and intercity passenger railroad to develop and implement an SSP, supported by an FRA-approved SSP plan, to improve the safety of its operations. The rule became effective on October 10, 2016, but did not require railroads to submit their SSP plans to FRA for review and approval until February 8, 2018. FRA received four petitions for reconsideration of the rule and consistent with the new Administration’s guidance to provide the Administration an adequate opportunity to review new and pending regulations, FRA stayed the rule’s requirements and announced that it would conduct public outreach with interested parties to inform its decisions on the issues raised in the petitions. Subsequently, in November 2017, FRA extended the stay of the rule until December 4, 2018. FRA is in the process of conducting outreach and considering feedback from all stakeholders to develop a response to the petitions.

FRA published a Notice of Proposed Rulemaking (NPRM) proposing the RRP rule on February 27, 2015. FRA is currently drafting the final rule.

In cooperation with RSAC, FRA is currently developing an FRMP proposed rule that would require railroads to develop, implement, and comply with FRMPs as part of an RRP or SSP.

7. **Please provide the Subcommittee with a list of all recipients of RRIF and Transportation Infrastructure Finance and Innovation Act (TIFIA) loans, along with the amounts of such loans, for implementation of PTC.**

In May 2015, FRA issued a \$967.1-million loan to Metropolitan Transportation Authority for Long Island Rail Road's and Metro-North Railroad's implementation of PTC systems. On December 8, 2017, the Build America Bureau closed a \$162 million Transportation and Infrastructure Finance and Innovation ACT (TIFIA) loan and a \$220 million RRIF loan to be issued to the Massachusetts Bay Transportation Authority for PTC system implementation.

- 8. Please provide the Subcommittee with a list of all recipients of grants, along with the amounts of such grants, for implementation of PTC.**

Please see attached document titled, "PTC Grants and Loans_03-15-2018 – Summary Table.pdf"

- 9. Please provide the Subcommittee with the following:**
- A. A list of each commuter, intercity passenger, and freight railroad that has received a passenger terminal exception under 49 CFR Section 236.1019**
 - B. A list of each commuter, intercity passenger, and freight railroad that has received a limited operations exception under 49 CFR Section 236.1019(c)(1)(i)**
 - C. A list of each commuter, intercity passenger, and freight railroad that has received a limited operations exception under 49 CFR Section 236.1019(c)(1)(ii)**
 - D. A list of each commuter, intercity passenger, and freight railroad that has received a limited operations exception under 49 CFR Section 236.1019(c)(1)(iii)**
 - E. A list of each commuter, intercity passenger, and freight railroad that has received a limited operations exception under 49 CFR Section 236.1019(c)(2)(i)**
 - F. A list of each commuter, intercity passenger, and freight railroad that has received a limited operations exception under 49 CFR Section 236.1019(c)(2)(ii)**
 - G. A list of each commuter, intercity passenger, and freight railroad that has received an exception under 49 CFR Section 236.1019, other than those listed in subparagraphs (a)-(f) of this question.**

Please also include the track mileage subject to each of the exceptions.

As of March 22, 2018, FRA has approved the following railroads' requests for a main line track exception under 49 CFR § 236.1019:

A. Passenger Terminal Exceptions Under 49 CFR § 236.1019(b)

Railroad	Main Line Track Exception Type	Track Mileage Estimate
Amtrak (ATK)	Passenger Terminal (7 locations)	Less than 10 miles
Denton County Transportation Authority (DCTA)	Passenger Terminal (2 locations)	Less than 3 miles
Long Island Rail Road (LIRR)	Passenger Terminal (3 locations)	Less than 10 miles
Massachusetts Bay Transportation Authority (MBTA)	Passenger Terminal (2 locations)	Less than 2 miles
Metro-North Commuter Railroad Co. (MNCW)	Passenger Terminal	Less than 1 mile
Nashville and Eastern Railroad / Nashville Regional Transportation Authority (NRTX)	Passenger Terminal (2 locations)	Less than 1 mile
New Jersey Transit (NJTR)	Passenger Terminal	Less than 1 mile
Northeast Illinois Regional Corporation (NIRC) "Metra"	Passenger Terminal	Less than 1 mile
Northern Indiana Commuter Transportation (NICD)	Passenger Terminal	3 miles
Peninsula Corridor Joint Powers Board (PCMZ) "Caltrain"	Passenger Terminal	Less than 1 mile
Portland & Western Railroad (PNWR)	Passenger Terminal (3 locations)	Less than 1 mile

Railroad	Main Line Track Exception Type	Track Mileage Estimate
Sonoma-Marín Area Rail Transit (SMART)	Passenger Terminal	Less than 1 mile
Southeastern Pennsylvania Transportation Authority (SEPTA)	Passenger Terminal	Less than 1 mile
Southern California Regional Rail Authority (SCAX) "Metrolink"	Passenger Terminal	Less than 1 mile
Trinity Railway Express (TRE)	Passenger Terminal (3 locations)	Less than 2 miles
Union Pacific Railroad (UP)	Passenger Terminal	Less than 1 mile

B. Limited Operations Exceptions Under 49 CFR § 236.1019(c)(1)(i)

Railroad	Main Line Track Exception Type	Estimated Track Mileage
Alaska Railroad (ARR)	Limited Operations (8 locations)	Less than 20 miles
Canadian National Railway (CN)	Limited Operations (3 locations)	Approx. 2 miles
Long Island Rail Road (LIRR)	Limited Operations (10 locations)	Less than 10 miles
Massachusetts Bay Transportation Authority (MBTA)	Limited Operations (4 locations)	Less than 2 miles
Metro-North Commuter Railroad Co. (MNCW)	Limited Operations (7 locations)	Less than 3 miles
Minnesota Commercial Railway (MNNR)	Limited Operations	Less than 2 miles
New Mexico Rail Runner Express (NMRX) "Rio Metro"	Limited Operations	24 miles
New Orleans Public Belt (NOPB)	Limited Operations	Less than 6 miles

Railroad	Main Line Track Exception Type	Estimated Track Mileage
North County Transit District (SDNX)	Limited Operations	Less than 1 mile
Peninsula Corridor Joint Powers Board (PCMZ) "Caltrain"	Limited Operations (3 locations)	Less than 2 miles
Souther Commuter Rail (SCR)	Limited Operations	Less than 1 mile
Southeastern Pennsylvania Transportation Authority (SEPTA)	Limited Operations	Less than 1 mile
Virginia Railway Express (VREX)	Limited Operations (3 locations)	Less than 1 mile

C. Limited Operations Exceptions Under 49 CFR § 236.1019(c)(1)(ii)

Railroad	Main Line Track Exception Type	Estimated Track Mileage
Long Island Rail Road (LIRR)	Limited Operations	50 miles
Metro-North Commuter Railroad Co. (MNCW)	Limited Operations (2 locations)	52 miles

D. Limited Operations Exceptions Under 49 CFR § 236.1019(c)(1)(iii)

FRA has not approved any main line track exceptions under this provision as of March 22, 2018.

E. Limited Operations Exceptions Under 49 CFR § 236.1019(c)(2)(i)

Railroad	Main Line Track Exception Type	Estimated Track Mileage
Massachusetts Coastal Railroad (MCRR)	Limited Operations	43 miles
New England Central Railroad (NECR)	Limited Operations (2 locations)	237 miles
New Jersey Transit (NJTR)	Limited Operations (5 locations)	Less than 30 miles
Saratoga and North Creek Railway (SNC)	Limited Operations	Approx. 55 miles

Railroad	Main Line Track Exception Type	Estimated Track Mileage
Vermont Railway (VRS)	Limited Operations (3 locations)	Approx. 24 miles

F. Limited Operations Exceptions Under 49 CFR § 236.1019(c)(2)(ii)

Railroad	Main Line Track Exception Type	Estimated Track Mileage
Buckingham Branch (BB)	Limited Operations (2 locations)	Approx. 275 miles
Consolidated Rail Corp. (CRSH)	Limited Operations	Approx. 5 miles
New Jersey Transit (NJTR)	Limited Operations	Approx. 3 miles
Pan Am Railways (GRS)	Limited Operations (4 locations)	Approx. 106 miles

G. Any Other Main Line Track Exceptions Under 49 CFR § 236.1019

In addition, FRA has approved the following railroads' requests for a main line track exception under 49 CFR § 236.1019(c)(3):

Railroad	Main Line Track Exception Type	Estimated Track Mileage
BNSF Railway	Limited Operations (5 locations)	Approx. 587.2 miles
Canadian National Railway	Limited Operations (4 locations)	Approx. 19.28 Miles and Y&MV Junction to Milepost 5
Union Pacific Railroad	Limited Operations (3 locations)	Approx. 278.57 miles

Submitted on behalf of Congressman Jason Lewis (MN-02)

1. **Administrator Reyes, I understand you have been reviewing, and in some instances extending, deadlines for the use of grant dollars to help implement PTC on our railroads. I appreciate the FRA working with the rail industry to ensure funds allocated to PTC can be used for that purpose. The Government Accountability Office (GAO) and FRA studies have noted that railroads face limited access to suppliers of PTC. It has come to my attention that because of the lack of competition for PTC technologies, some railroads have struggled to negotiate and obtain PTC in a timely manner.**

- **Does the FRA believe this remains an issue? Have sole-source providers affected the pace at which railroads are investing in PTC systems?**

Several PTC system products and PTC system implementation services involve sole-source procurements, given the limited number of PTC system vendors and suppliers. These vendors and suppliers are supporting all 41 railroads subject to the statutory mandate and their tenant railroads subject to the statutory interoperability requirements and FRA's implementing regulations, including 49 CFR § 236.1006. Several railroads have informed FRA that negotiating legal agreements with certain suppliers often took multiple years to complete, given various contractual terms and conditions imposed by certain suppliers and various commercial, insurance, liability, and other legal issues that are outside the scope of FRA's jurisdiction. Nonetheless, most railroads have entered into contracts with vendors and suppliers, but FRA's understanding is that a few railroads had not signed contracts with certain vendors and suppliers as of mid-February 2018. In general, during FRA's recent meetings with the leadership of the 41 railroads subject to the statutory mandate, railroads commonly conveyed that an ongoing challenge is the fact that there is a limited number of PTC system vendors and suppliers, all of which are significantly resource-constrained and serving all 41 railroads and their tenant railroads.

2. **Administrator Reyes, as we near the PTC implementation deadline I am hopeful we will see total compliance. However, in the instance someone doesn't achieve full integration, if one railroad reaches compliance and hosts a tenant who is not compliant they will be taking on some sort of additional risk.**
- **If they do not want to incur that liability does the FRA believe hosts may terminate contracts and/or refuse access?**
 - **Could this negatively impact public transportation if such an entity is uncompliant?**

FRA interprets "full implementation"¹⁹ to mean that an FRA-certified and interoperable PTC system—including all hardware, software, and other components—has been fully installed and is

¹⁹ See, e.g., 49 U.S.C. § 20157(a)(3)(B)(v); 49 CFR § 236.1005(b)(7); 79 Fed. Reg. 49693, 49706 (Aug. 22, 2014).

in operation on all route miles required to have operations governed by a PTC system under 49 U.S.C. § 20157.²⁰ The statutory mandate and FRA's implementing regulations require a PTC system to be interoperable.²¹

At least two railroads have informally indicated to FRA that they might attempt to refuse access to certain non-compliant tenant railroads; however, railroads have also acknowledged to FRA that such actions might, in practice, be prohibited by preexisting bilateral contracts, easements, common carrier obligations, and other legal rights.

²⁰ See, e.g., 49 U.S.C. § 20157(a)(1)–(3), (e)–(h), (i)(3); 49 CFR part 236, subpart I. The PTCEI Act, however, recognizes that certain PTC system failures (e.g., initialization failures, cut outs, and malfunctions) will occur after the statutory implementation deadline, but a railroad must both operate at an equivalent or greater level of safety than the level of safety achieved immediately prior to the use or implementation of the PTC system and comply with certain safety measures during any PTC system failures. See 49 U.S.C. § 20157(j).

²¹ See 49 U.S.C. § 20157(a)(2)(A)(i)(1), (a)(2)(D), (i)(3); 49 CFR §§ 236.1003, 236.1011(a)(3).

Submitted on behalf on Congressman John Garamendi (CA-03)

1. **Congress mandated that FRA complete several rulemakings in the *Rail Safety Improvement Act of 2008*. A major concern to locomotive engineers and conductors is the impact of operator fatigue in the freight rail industry. The 2008 law required the railroads to develop Fatigue Management Plans and there will be two pilot projects to address fatigue with assigned schedules or a 10-hour notification of an on-duty time. With men and women operating trains for 12 hours a day, it seems to me that giving workers 10-hour notification seems like a modest proposal. Why hasn't FRA completed the Fatigue Management Plans or pilot projects as directed by Congress almost 10 years ago, and what is FRA doing to finalize the two mandates?**

In response to Congress's mandate, FRA, in cooperation with the RSAC, is currently developing a proposed rule that would require railroads required to comply with the Risk Reduction Program (RRP) or System Safety Program (SSP) rules to develop, implement, and comply with Fatigue Risk Management Plans (FRMPs) as part of either an RRP or SSP.

With regard to the mandate to conduct two pilot projects, FRA must identify railroads and rail labor organizations willing to participate in such projects. To date, no railroad or labor organization has expressed interest in participating in such projects, but FRA continues to encourage participation. Once parties volunteer, FRA will conduct studies of at least two specified pilot projects involving examination and analysis of hours of service issues. In one project, a railroad must provide ten hours of notice of the next assigned shift; in the other project, a railroad must assign employees to defined shifts subject to unscheduled calls, followed by shifts not subject to unscheduled calls. FRA will continue efforts to encourage affected parties to participate in the pilot projects.

2. **The *Rail Safety Improvement Act of 2008* mandated FRA to issue a rule requiring emergency escape breathing apparatus. However, it took FRA just last year (2017) for the agency to act, which then only issued a guidance document instead of the required regulation. When is the FRA going to be fully compliant with this mandate in the 10-year-old piece of legislation?**

On October 5, 2010, FRA published a Notice of Proposed Rulemaking (NPRM) proposing to require railroads to provide and maintain breathing apparatuses to their crewmembers on certain trains, as well as specified training. The costs of this proposed rule far outweighed any potential safety benefits. Accordingly, FRA continues to evaluate whether any more economical means of mandating that railroads provide train crew members emergency escape breathing apparatus exists.

Submitted on behalf of Congressman Daniel Lipinski (IL-03)

1. **I would like to ask about the *Railroad Rehabilitation and Improvement Financing* (RRIF) eligibility because I want to ensure that applicants have broad eligibilities for funding. Is it FRA's interpretation that all components of the PTC system are eligible under RRIF, including wayside infrastructure, locomotive hardware, back office servers, and spectrum? What about the required personnel training?**

Yes, all components necessary for implementing a positive train control system are eligible for RRIF and TIFIA. For required training, it depends. RRIF and TIFIA cannot fund operating expenses. If the training, similar to some project management costs, are directly chargeable to the capital project, then RRIF / TIFIA could fund the training costs.

2. **Is it still the policy of this Administration that RRIF loans, including those issued for PTC implementation, must meet Buy America requirements?**

Yes.

3. **Is FRA working with rail stakeholders on PTC-related cybersecurity issues? Are there best practices or recommendations?**

The security requirements for PTC systems are set forth in FRA's PTC regulations under 49 CFR § 236.1033, including the requirement for all wireless communications between the office, wayside, and onboard components in a PTC system to provide cryptographic message integrity and authentication.²² FRA also provides advice and support on technical matters relating to cybersecurity through its participation in, for example, AAR's Advanced Civil Speed Enforcement System II Working Group, APTA's Interoperable Electronic Train Management System Working Group for commuter railroads, and the railroad-led Enhanced Automatic Train Control Working Group.

4. **In fiscal year 2017, Congress appropriated \$5 million more than the requested level specifically so FRA could hire necessary staff and contractors to provide guidance and certification of PTC. With the deadline less than a year away, why are key PTC staffing positions still vacant? When are you planning to fill these positions?**

FRA's PTC program consists of technical and programmatic staff and contractors, many of whom are dedicated to PTC on a full-time basis and a subset that supports the program on a part-time basis (while also performing other duties). This team currently includes 28 Full Time Equivalent (FTE) positions, as detailed below:

- Full Time FRA Technical Staff & Contractors (14 FTE): 1 Staff Director of the PTC Division (retiring during Quarter 2 of 2018), 2 senior test monitors, 8 PTC specialists

²² 49 CFR § 236.1033(a); see also 49 CFR § 236.1015(d)(20).

(including 2 specialists that were hired in Quarter 1 of 2018), 1 software engineer, and 2 technical contractors.

- Full Time FRA Programmatic Staff & Contractors (7 FTE): 1 attorney, 1 program analyst, 1 project manager (who joined during Quarter 1 of 2018), 1 project management contractor, and 3 data analyst contractors.
- Part Time FRA Technical & Programmatic Staff (approx. 7 FTE): 1 senior scientist, 1 Staff Director of the Signal & Train Control (S&TC) Division, 1 Staff Director of the Passenger Rail Division (and PTC Task Force manager), 2 S&TC engineers, 1 attorney, and 1 contractor that provides PTC Safety Plan reviews on a task-order basis (average 2.5 FTE).

FRA is expanding its PTC team to approximately 35+ FTE in preparation for the increased workload in 2018 and beyond, in the following manner:

- To replace the PTC Staff Director who is retiring in Quarter 2 of 2018, the current S&TC Staff Director will take on the duties of both positive train control and signal & train control. Two new supervisory positions are being advertised to support the staff director, one to focus full time on PTC and one to focus full time on S&TC.
- One headquarters PTC specialist position will be advertised in Quarter 2 of 2018 to support PTC Safety Plan reviews.
- Three new contract positions are currently being procured to expand the PTC programmatic team, including one technical project manager for PTC Safety Plan reviews and two additional data analysts to support various aspects of the PTC program, including the review of requests for amendments to railroads' PTC Implementation Plans.
- An additional procurement is currently underway for a further set of contractors to support PTC Safety Plan review, with the skill set capable of reviewing a PTC Safety Plan in its entirety.

Finally, members from FRA's Office of Railroad Safety and Office of Chief Counsel will serve on a newly created PTC Board to establish and monitor staff-level priorities, direct agency resources, and facilitate efficient resolution of railroads' technical issues.

Submitted on behalf of Congressman Rick Larsen (WA-02)

1. **The Senate recently confirmed the nomination of Ronald Batory to serve as the new FRA administrator. However, positions for key technical specialists regarding PTC certification and rail safety remain vacant. Mr. Reyes, what rail safety positions, including those related to PTC, remain vacant at FRA and what actions is your agency taking to fill those vacancies?**

FRA's PTC program consists of technical and programmatic staff and contractors, many of whom are dedicated to PTC on a full-time basis and a subset that supports the program on a part-time basis (while also performing other duties). This team currently includes 28 Full Time Equivalent (FTE) positions, as detailed below:

- Full Time FRA Technical Staff & Contractors (14 FTE): 1 Staff Director of the PTC Division (retiring during Quarter 2 of 2018), 2 senior test monitors, 8 PTC specialists (including 2 specialists that were hired in Quarter 1 of 2018), 1 software engineer, and 2 technical contractors.
- Full Time FRA Programmatic Staff & Contractors (7 FTE): 1 attorney, 1 program analyst, 1 project manager (who joined during Quarter 1 of 2018), 1 project management contractor, and 3 data analyst contractors.
- Part Time FRA Technical & Programmatic Staff (approx. 7 FTE): 1 senior scientist, 1 Staff Director of the Signal & Train Control (S&TC) Division, 1 Staff Director of the Passenger Rail Division (and PTC Task Force manager), 2 S&TC engineers, 1 attorney, and 1 contractor that provides PTC Safety Plan reviews on a task-order basis (average 2.5 FTE).

FRA is expanding its PTC team to approximately 35+ FTE in preparation for the increased workload in 2018 and beyond, in the following manner:

- To replace the PTC Staff Director who is retiring in Quarter 2 of 2018, the current S&TC Staff Director will take on the duties of both positive train control and signal & train control. Two new supervisory positions are being advertised to support the staff director, one to focus full time on PTC and one to focus full time on S&TC.
- One headquarters PTC specialist position will be advertised in Quarter 2 of 2018 to support PTC Safety Plan reviews.
- Three new contract positions are currently being procured to expand the PTC programmatic team, including one technical project manager for PTC Safety Plan reviews and two additional data analysts to support various aspects of the PTC program, including the review of requests for amendments to railroads' PTC Implementation Plans.

- An additional procurement is currently underway for a further set of contractors to support PTC Safety Plan review, with the skill set capable of reviewing a PTC Safety Plan in its entirety.

Finally, members from FRA's Office of Railroad Safety and Office of Chief Counsel will serve on a newly created PTC Board to establish and monitor staff-level priorities, direct agency resources, and facilitate efficient resolution of railroads' technical issues.

2. **Recently, your agency announced plans to administer \$68 million in fiscal year 2017 Consolidated Rail Infrastructure and Safety Improvements (CRISI) grant funding to support projects that enhance rail safety. How will the FRA ensure these funds are distributed in a timely manner to help railroads meet the December 31, 2018 deadline?**

Applications are due to the Federal Railroad Administration for CRISI grants by 5 p.m. EDT on Thursday, June 21, 2018. The CRISI grant program, which was authorized in the FAST Act, and funded for the first time in the Consolidated Appropriations Act, 2017, can fund a wide range of intercity passenger and freight rail projects, including positive train control implementation projects. Should any positive train control implementation projects be selected for award, FRA will work expeditiously with the grantee to obligate the funds.

3. **On January 10, 2018, I joined some of my colleagues in sending a letter to Secretary Chao regarding implementation of Section 11406 of the *Fixing America's Surface Transportation Act* (P.L. 114-94, FAST Act), which required each commuter and intercity passenger railroad to survey its system and identify each curve, bridge, or tunnel requiring a reduction of more than 20 miles per hour from the approach speed and submit an action plan detailing steps the railroad will take to enhance safety at those locations. The letter asks about the status of those action plans, whether Amtrak submitted such a plan, and whether DOT reviewed and approved it. I raised this at the hearing and you stated that you would get back to me with more information.**

- Have all the commuter and intercity passenger railroads including Amtrak, submitted their action plans to DOT? If not, which ones have not submitted their action plans to DOT?
- Has DOT reviewed and approved all the plans that have been submitted?
- If Amtrak's was submitted, what date did Amtrak submit its action plan?
- If DOT reviewed and approved Amtrak's action plan, what date did DOT approve it?
- Please provide Amtrak's action plan to the Committee.

All commuter and intercity passenger railroads, including Amtrak, required to submit an action plan to DOT have submitted such a plan. FRA has reviewed and approved each of the submitted plans. Amtrak submitted its plan to FRA on July 2, 2016, and followed with a revised version on August 2, 2016. FRA approved Amtrak's plan on September 28, 2016. A copy of Amtrak's

FRA-approved action plan is attached along with a copy of FRA's September 28, 2016, approval letter.

Submitted by Subcommittee Ranking Member Michael Capuano (MA-07) on behalf of Congressman Denny Heck (WA-10)

1. Section 11406 of the FAST Act required each railroad carrier providing intercity rail passenger transportation or commuter rail passenger transportation to survey its entire system and identify each curve, bridge, or tunnel requiring a reduction of more than 20 miles per hour from the approach speed and submit an action plan detailing steps the railroad will take to enhance safety at those locations.
 - Has Amtrak submitted any speed limit action plans to the U.S. Department of Transportation (DOT) for review and approval, as required by law?
 - Has DOT reviewed and approved such plans?

All commuter and intercity passenger railroads, including Amtrak, required to submit an action plan to DOT have submitted such a plan. FRA has reviewed and approved each of the submitted plans. Amtrak submitted its plan to FRA on July 2, 2016 and followed with a revised version on August 2, 2016. FRA approved Amtrak's plan on September 28, 2016. A copy of Amtrak's FRA-approved action plan is attached along with a copy of FRA's September 28, 2016, approval letter.

E.R.A. 3/15/2018

Funding Opportunity (FY)	Funding Source	Schedule
2007, 2009, 2010	High-Speed Incentive Program	474,110,582
2010, 2011, 2016	Railroad Safety Technology Grant Program	85,748,776
2009-2016, 2008-2017	Amtrak's Railroad Safety and Improvement Act (RRSA) Grant	
2009-2016, 2008-2017	Annual's Railroad Safety and Improvement Act (RRSA) Grant	
2009-2016, 2008-2017	Capital	171,532,019
2017	FY16 Fixing America's Surface Transportation (FAST) Act	197,010,000
	PTC Grant Program	
	Transportation Infrastructure Finance & Interchange Act (TIFIA) and Railroad Rehabilitation & Improvement Financing (RRIF)	13,493,160,000
	Transportation Infrastructure Finance & Interchange Act (TIFIA) and Railroad Rehabilitation & Improvement Financing (RRIF)	2,477,000

Grant Funding Timeline

FAST Act Speed Limit Action Plan

- 1) In response to Emergency Order No. 31 of May 28, 2015, Amtrak submitted a Northeast Corridor Curve Mitigation Plan on June 8, 2015 (Revised June 12, 2015), which was accepted by FRA on June 25, 2015. The plan called for modification of the signal system so that the ATC would enforce cab signal changes in order to ensure that safe train speeds were enforced for more than 20MPH reductions from the maximum authorized approach speed to curves. All these modifications on the NEC were completed by August 31, 2015.

Subsequently all areas of the Amtrak NEC (except the Main Line – Mill River to Springfield (MRS), which does have the modified signal system in place), and the Amtrak Michigan Line (AML) have working Positive Train Control in effect: ACSES on the NEC (scheduled for implementation on the MRS in two pieces: Springfield to Hartford by December, 2016 and the remainder by December, 2017, after the double track construction is completed) and ITCS on the AML.

Amtrak requests exemption from any other requirements of the FAST Act's Speed Limit Action Plan on the above segments which are governed by PTC or a modified signal system.

- 2) On the remainder of Amtrak's Route's: the Hudson Line and the routes on which Amtrak is a tenant and does not own the infrastructure, Amtrak plans to make mandatory the communication between the locomotive engineer and another qualified crew member when approaching the listed Speed Restrictions. The sample instruction below will be issued in General Orders and tailored specifically for routes in each Region or Subdivision:

Approaching Speed Restrictions – Communications To Remind The Engineer

The Conductor, or other qualified person, must verbally remind the Locomotive Engineer of the curve, bridge or tunnel speed restrictions as outlined below.

1. The Conductor may perform this task or assign the task to another qualified person.
2. The person responsible for performing the task must be identified to all crew members during the initial job briefing and whenever the responsibility for performing the task changes.
3. After the train passes the last station ("station" means a location named in the timetable) but at least one mile from the restriction, the Conductor or designated qualified person must remind the Locomotive Engineer that the train is approaching a curve, bridge or tunnel speed restriction, and confirm that the Locomotive Engineer has acknowledged the required speed reductions listed below:

XXX Line – Passenger Train Curve Communication Requirements			
Track(s)	Restriction	Direction	Speed

4. If the Engineer does not confirm the speed reduction reminder, or fails to demonstrate compliance with the required speed reduction, the qualified person must:

- a.) Immediately take the action necessary to stop the train, if not located in the operating cab or control compartment.
- b.) Immediately take action to slow or stop the train, if located in the operating cab or control compartment.

For the purposes of the requirements outlined above, a “*qualified person*” must be qualified on the physical characteristics and the signal systems used in the territory, and must be qualified to apply the emergency brake, if necessary to stop the train. Where the train crew consists of two Locomotive Engineers, including a Student Engineer who meets the qualification requirements, the requirements may be satisfied by the 2nd Locomotive Engineer or Student Engineer performing the task.

This Plan will go into effect no later than 45 days after it is approved. The 45 days will be used to craft the various General Orders which will be issued for the specific routes, a Rules Alert for the use of supervisors as the basis for briefing T&E employees (all briefings will be documented in Amtrak’s 217.9 Program to ensure that everyone is given instruction) and conference calls with Q&A sessions which will be conducted to explain the Plan and its requirements to supervisors in order to ensure that they understand the Action Plan and its requirements and are thus able to instruct and monitor the T&E employees who report to them. The Rules Alert and Briefings will also remind our crews to be alert for the signage that protect the speed drops on those host railroads which employ signs.

After the Briefings on the Rules Alert have been completed and the Plan started, there will be periodic efficiency testing of the crews to ensure that the speed restrictions are being observed and that they are communicating according to the General Orders in order to remind the engineer of the over 20 MPH drops. We will invite host railroad supervisors to conduct joint testing with Amtrak supervisors. Examination of the 217.9 efficiency testing records by System Operating Practices and field managers will verify that testing is occurring.

As PTC begins to come on line on the rest of Amtrak property, specifically the Hudson line which will be equipped with PTC (ACSES) in two stages; the first segment, Poughkeepsie to Albany/Rensselaer (the vast majority of the line) by September, 2017 and the remaining portion by December, 2017 and the railroads where Amtrak is a tenant, Amtrak will request exemption from the FAST Act Speed Limit Action Plan communication requirements as it did from EO 31, after cab signal modifications were made or where ACSES came on line.



U.S. Department
of Transportation
**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

SEP 28 2016

Mr. David Nichols
Vice President and Chief Transportation Officer
National Railroad Passenger Corporation
2955 Market Street
Philadelphia, PA 19104

Re: FAST Act Speed Limit Action Plan

Dear Mr. Nichols:

This letter is in response to your July 2, 2016, email (revised on August 2, 2016), regarding the Speed Limit Action Plan (Action Plan) submission requirement contained in Section 11406 of the Fixing America's Surface Transportation Act (FAST Act) for the National Railroad Passenger Corporation (Amtrak).

As stated in your Action Plan, all areas of the Amtrak Northeast Corridor (NEC), except the Main Line—Mill River to Springfield (MRS), (which does have a modified signal system in place), and the Amtrak Michigan Line (AML), have working Positive Train Control (PTC) in effect, specifically the Advanced Civil Speed Enforcement System (ACSES) on the NEC. PTC is scheduled for implementation on the MRS in two phases: Springfield to Hartford by December 2016 and the remainder of MRS by December 2017, after the construction of double track is completed. Incremental Train Control System (ITCS) is installed on the AML. Prior to the installation of PTC, Amtrak complied with the requirements of Federal Railroad Administration's (FRA) Safety Advisory (SA) 2015-03 and modified the signal system so that the ATC would enforce cab signal changes in order to ensure that safe train speeds were enforced for more than 20 miles per hour (mph) reductions from the maximum authorized approach speed to curves.

On the remainder of Amtrak's Routes outside of the NEC, specifically the Hudson Line and the routes on which Amtrak is a tenant and does not own the infrastructure, Amtrak is implementing its submitted Action Plan with the full cooperation of respective host railroads as necessary.

FRA has reviewed Amtrak's Action Plan and highlights the following Action Plan details:

1. Each main track location is identified where there is a reduction of more than 20 mph from the approach speed to a curve, bridge, or tunnel and the maximum authorized operating speed for trains at the curve, bridge, or tunnel.

2. The Action Plan describes the actions taken at the identified locations for warning and enforcing the maximum authorized speed. Amtrak is working with host railroads to make mandatory the communication between the locomotive engineer and another qualified crew member when approaching the listed speed restrictions.
3. The Action Plan contains milestones and target dates for completion of any action identified. Specifically, Amtrak promises that this Action Plan will go into full effect no later than 45 days after FRA's approval. The Plan states that the 45 days will be used to craft the various General Orders which will be issued for the specific routes and Rules Alerts for the use of supervisors as the basis for briefing Train and Engine (T&E) employees.
4. The Action Plan ensures compliance with the maximum authorized speed at each identified location. Amtrak states that all briefings will be documented in Amtrak's program based on Title 49 §217.9, *Program of operational tests and inspections; recordkeeping*, to ensure that all T&E employees are given instruction. The Action Plan also mentions that conference calls with question and answer sessions will be conducted with crew and supervisors in order to ensure that they understand the Action Plan and its requirements and are thus able to instruct and monitor the T&E employees who report to them. A "Rules Alert and Briefings" will also remind crews to be alert for any signage that protect the speed drops wherever host railroads chose to employ signs. Finally, the Action Plan offers good details and states that "after the Briefings on the Rules Alert have been completed and the Plan starts, there will be periodic efficiency testing of the crews to ensure that the speed restrictions are being observed and that they are communicating according to the General Orders to remind the engineer of the more than 20 mph drop. Amtrak will invite host railroad supervisors to conduct joint testing with Amtrak supervisors. Examination of the 217.9 efficiency testing records by System Operating Practices and field managers will verify that testing is occurring."

FRA has carefully reviewed your Action Plan and takes no exception as long as Amtrak adheres to its terms and conditions. If you have any questions, please contact Mr. John Mardente, Civil Engineer, Passenger Rail Division, at (202) 493-1335 or John.Mardente@dot.gov.

Sincerely,



Karl Alexy
Director, Office of Safety Analysis

bcc: Mr. Daniel Knotz
Mr. Melvin Smith

STATEMENT OF

**EDWARD R. HAMBERGER
PRESIDENT & CHIEF EXECUTIVE OFFICER
ASSOCIATION OF AMERICAN RAILROADS**



**BEFORE THE
U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
SUBCOMMITTEE ON RAILROADS, PIPELINES AND
HAZARDOUS MATERIALS**

**OVERSIGHT OF POSITIVE TRAIN CONTROL
IMPLEMENTATION IN THE UNITED STATES**

FEBRUARY 15, 2018

**Association of American Railroads
425 Third Street SW
Washington, DC 20024
202-639-2100**

On behalf of the Association of American Railroads (AAR), thank you for the opportunity to discuss positive train control (PTC). AAR members account for the vast majority of North American freight railroad mileage, employees, and revenue.

In this testimony, I will review what positive train control is and what it is meant to do; the progress railroads have made in the development and implementation of this technology; and what to expect going forward. While other railroad entities use each Class I railroad's tracks — Amtrak, commuter railroads, and shortlines — my focus will be on Class I freight railroads and their PTC operations.

The bottom line is that by December 31, 2018, all Class I's will have completed PTC installation, just as Congress required. Further, by the end of this year PTC will be in operation on the vast majority — approximately 80 percent — of Class I PTC route-miles network wide, with some Class I railroads planning to be fully implemented on their networks. Between 2018 and 2020, the remaining Class I railroads will be completing PTC implementation, consistent with the statute. All railroads will continue their work on resolving technical operational challenges that will inevitably rise, which Congress anticipated and specifically provided protection for in its 2015 law. They also will be addressing perhaps the biggest challenge of PTC implementation: interoperability with each other and with their tenant passenger and shortline railroads.

What is Positive Train Control?

“Positive train control” (PTC) describes technologies designed to automatically stop a train before certain accidents caused by human error occur. Under the Rail Safety Improvement

Act of 2008 (RSIA), passenger railroads and Class I freight railroads are required to install PTC on main lines used to transport passengers or toxic-by-inhalation (TIH) materials.¹

Specifically, PTC as mandated by the RSIA must be designed to prevent four major types of train accidents: train-to-train collisions; derailments caused by excessive speed; unauthorized incursions by trains onto sections of track where maintenance activities are taking place; and the movement of a train through a track switch left in the wrong position.² The PTC system now being installed to meet this statutory mandate is an overlay system, designed to be failsafe and meant to supplement, rather than replace, existing methods of operation.

Positive Train Control is an Unprecedented Technological Challenge

To work as it should, a PTC system must be able to determine the precise location, direction, and speed of trains; warn train operators of potential problems; and take immediate action if the operator fails to act after a warning is provided by the PTC system. For example, if a train operator fails to begin stopping a train before a stop signal or slowing down for a speed-restricted area, the PTC system will override the operator and apply the brakes automatically before the train passes the stop signal or enters the speed-restricted area.

A PTC system consists of three main elements that are integrated by a fourth critical element, the wireless data communications system. An *onboard or locomotive system* monitors a train's position and speed and activates braking as necessary to enforce speed restrictions and unauthorized train movements; a *wayside system* monitors railroad track signals, switches, and track circuits to communicate data on this local infrastructure needed to permit the onboard

¹ TIH materials are gases or liquids, such as chlorine and anhydrous ammonia, which are especially hazardous if released into the atmosphere.

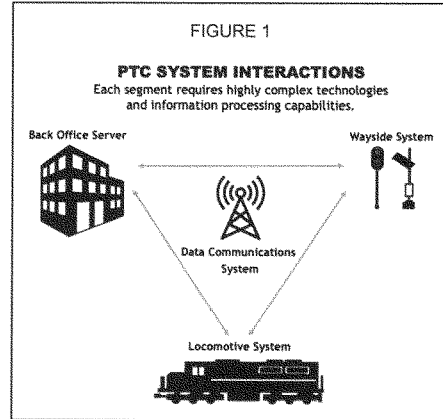
² A switch is the infrastructure that controls the path of trains where two sets of tracks diverge or converge.

system to authorize movement of a locomotive; and a *back office server* stores all information related to the rail network and trains operating across it (e.g., speed restrictions, movement authorities, train compositions, etc.) and transmits this information to individual locomotive onboard enforcement systems. Finally, all of these are integrated by a *wireless data*

communications system that must move massive amounts of information back and forth between the back office servers, the wayside equipment, and the locomotive's on-board computers.

Such a system requires highly complex technologies able to analyze and incorporate the huge number of variables that affect train operations. A simple example: the length of time it takes to stop a freight train depends on train speed, terrain, the weight and length of the train, the number and distribution of locomotives and loaded and empty freight cars on the train, and other factors. During the operation of a single train over a single operating segment of track known as a sub-division, the length of time and the distance needed to stop that train may change 100 or more times due to changes in the factors mentioned above. A PTC system must be able to take all of these factors into account automatically, reliably, accurately and in real time in order to safely stop the train wherever it may be along its route.

PTC development and implementation constitute an unprecedented technological challenge. Some of the development and installation tasks associated with the Class I railroads' efforts include:



- ✓ A complete physical survey and highly precise geo-mapping of the more than 54,000 route-miles on which PTC technology will be installed, including more than 450,000 field assets along the right-of-way (e.g., mileposts, curves, rail and highway grade crossings, switches, signals, track vertical profiles and horizontal geometry).
- ✓ Installing more than 28,500 custom-designed “wayside interface units” (WIU) that provide the mechanism for transmitting information from signal and switch locations along the right-of-way to locomotives and railroad facilities.
- ✓ Installing PTC technology on more than 17,200 Class I locomotives³.
- ✓ Installing PTC technology on nearly 2,100 switches in non-sigaled territory and completing signal replacement projects, including upgrades to PTC-compatible signal technology, at some 14,500 locations.
- ✓ Developing, producing, and deploying a new radio system specifically designed for the massive data transmission requirements of PTC at tens of thousands of base stations and trackside locations, and on more than 17,200 locomotives.
- ✓ Developing back office systems and upgrading and integrating dispatching software to incorporate the data and precision required for PTC systems.

In all these areas, Class I railroads have already made tremendous progress. Figure 2 has details on the status of Class I PTC installations at the end of 2017.

FIGURE 2					
CLASS I FREIGHT RAILROAD PTC INSTALLATION AS OF DEC. 31, 2017					
Locomotives			Wayside Interface Units		
Equipped and PTC Operable	Required for PTC Operation	% Complete	Installed	Required	% Complete
13,470	17,261	78%	26,698	28,604	93%
Employees			Radio Towers		
Trained	Require Training	% Complete	Installed	Required	% Complete
88,556	101,821	87%	14,667	15,067	97%
Source: AAR compilation of figures provided by individual Class I railroads					

³ As just one example of the magnitude of the PTC implementation effort, on average it takes one person working for one month to install all of the necessary PTC equipment on a single locomotive. It will take approximately 1,400 staff-years to install PTC on all of the Class I locomotives that require it.

Additionally, as shown in Figure 3, at the end of 2017, the Class I railroads already had in operation more than 30,000 route-miles, or 56 percent, of the 54,000 route-miles that will eventually be equipped with PTC. To be clear, each Class I railroad will install 100 percent of PTC wayside, back office, and locomotive hardware and complete all required training by the end of 2018 and Class I railroads collectively expect to have nearly 80 percent of required PTC route-miles operational network wide by the end of 2018.

FIGURE 3
CLASS I FREIGHT RAILROAD PTC
IN OPERATION AS OF DEC. 31, 2017

Miles		
In PTC Operation	Required for PTC Operation	% Complete
30,223	54,028	56%

Source: AAR compilation of figures provided by individual Class I railroads

The AAR estimates that, as of the end of 2017, freight railroads together have spent more than \$8 billion — of their own funds, not taxpayer funds — on PTC development and deployment, and expect to spend more than \$10 billion by the time PTC is fully operational nationwide. This does not include the hundreds of millions of additional dollars needed each year to maintain the railroads' PTC systems once they are initially installed.

Testing and Validation is Essential for Safe Operation and Full Interoperability

From the outset, railroads' efforts were focused on development and testing of technology that could meet the requirements of the RSIA, particularly those related to interoperability, and that could be scaled to the huge requirements of a nationwide system. For example, production and installation of the new radios — necessary to meet PTC's immense communication demands — became possible only after a long period of development and testing. Essential software and hardware for many PTC components had to be developed and deployed, and then rigorously tested. Only after technology is actually installed and exposed to

the rigors of day-to-day operations can the task of testing each of the individual parts, and the system as a whole, be completed under real world conditions.

This task is made particularly complex by the need to ensure that PTC systems are fully and seamlessly interoperable across all of the nation's major railroads. It is not unusual for one railroad's locomotives to operate on another railroad's tracks. When that happens, the "tenant" locomotives must be able to communicate with, and respond to conditions on, the "host" PTC system. Put another way, a CSX locomotive must behave like a Norfolk Southern locomotive when it is traveling on NS track; a BNSF locomotive must be compatible with Union Pacific's PTC system when it is on UP track, and so on. All the while, each railroad has its own operating rules designed to address specific conditions on its property, all consistent with FRA regulations, but further adding to this complexity. Ensuring this interoperability has been a significant challenge.

Interoperability appears to also have been a significant problem in Europe where the European Union's first "interoperability directive" was published in 2001. It was not until 2016 that sufficient technical progress in either hardware or software had been made to allow the first deployment of an early stage, interoperable system. However, much work remains to be done to cure both technical and institutional problems that keep their current technology from being fully equivalent to that required under U.S. statute. To date, only 2,400 miles of track in the EU are equipped with this new generation technology. The EU does not expect that a 30,000-mile

“core” network will be deployed before 2030; a full build out over 73,000 miles of the most densely used portions of the European network is not expected to be completed before 2050^{4,5}.

It is critical that the huge number of potential failure points in PTC systems be identified, isolated, and corrected. By necessity, a mature, well-functioning PTC system is enormously complex, and it is not realistic to think it will perform flawlessly day in and day out, especially upon initial implementation. That is precisely why testing, first in a simulated environment and then under real-world operating conditions, is so important. Unfortunately, the failure of a single part within a complex PTC system can mean the system does not work as it should. When that happens, the fail-safe nature of PTC means that trains are not able to operate normally on affected rail lines until the failure is corrected, a situation railroads are facing today as they proceed toward PTC implementation. U.S. railroads are working hard to limit negative impacts on their customers associated with PTC rollouts, but these impacts will be a fact of rail life particularly until the system fully matures.

Every day, as railroads finalize their PTC installation and expand PTC operations, additional accident avoidance becomes possible. However, as other train control systems implemented in other countries demonstrate, there is risk in improperly designed, installed, or operated PTC systems. This is not just a speculative concern. Since 2008, there have been a number of incidents worldwide in which accidents resulting in deaths and injuries occurred on

⁴ European Court of Auditors, Special Report No. 13, A Single European Rail Traffic Management System: Will the Political Choice Ever Become Reality? European Union, Luxembourg, July 2017.

⁵ European Commission, Delivering an Effective and Interoperable European Rail Traffic Management System (ERTMS) – The Way Ahead, Commission Staff Working Document, Brussels, November 2017.

rail lines that had PTC-like systems. Insufficient testing of PTC design or equipment has been identified as the cause in two high profile accidents involving significant fatalities^{6,7}.

These concerns make it essential that a railroad's first priority must be to implement PTC correctly, and to test and validate it thoroughly.

Conclusion

Railroads have devoted enormous human and financial resources to develop a functioning and reliable PTC system, and progress to date has been substantial. Class I railroads remain committed to safely implementing PTC as quickly as feasible. By the end of 2018, each Class I railroad will have implemented PTC or initiated revenue service demonstration on, at a minimum, 51 percent of its required PTC route-miles or subdivisions; have 100 percent of the necessary wayside, back office, and locomotive hardware installations completed; have all required spectrum in place; and have all required employee training completed.

In addition, network-wide, approximately 80 percent of required PTC route-miles are expected to be operational by the end of 2018. While several Class I railroads plan to be fully implemented by the end of this year, all Class I railroads will be fully implemented no later than 2020. In the meantime, Class I railroads will continue to work with each other and their tenant

⁶ In 2011 a pair of trains on a high-speed line in China equipped with a PTC-like system collided, resulting in 40 deaths and 192 injuries. Investigation of cause revealed that installation of a Japanese "off-the-shelf" PTC-like system failed to recognize and adjust for local operating conditions and rules and was not properly adapted to the dispatching and train management processes used on the Chinese line.

⁷ In 2013 a high-speed train in Spain derailed while exceeding the speed limit on a sharp curve at the end of the high-speed section of the railway, killing 79 passengers and injuring 139. The high-speed portion of the route was equipped with a PTC-like system, but failed to warn the locomotive engineer of the speed-restricted curve and also failed to take action to slow the train. Investigation of cause determined that the failure of the system to intercede was due to both design flaws and a failure of the operational components of the system.

passenger and shortline railroad partners to successfully achieve full interoperability – the largest remaining challenge to a fully implemented national PTC system.

"Oversight of Positive Train Control Implementation in the United States"

Thursday, February 15, 2018, 10:00 a.m.

2167 Rayburn House Office Building

Washington, D.C.

Questions for the Record

Submitted on behalf of Congressman Garrett Graves (LA- 06)

1. In 2015, the rail carriers indicated that because they were not able to implement positive train control (PTC) under the statutory timeline created in 2008, they would embargo shipments of TIH [MHI] products. These products include the chlorine needed for water treatment and countless other products, and the anhydrous for the fertilizer our farmers need to grow crops. Rail shippers, including many of the chemical companies in and around my district, worked constructively with you to secure an extension out until 2020. These commodities simply need to move via rail, and I think we can all agree that if they fail to move, the economy and the health and safety of Americans is threatened.

I have a few concerns now that new deadlines are approaching. I take you at your word that positive train control (PTC) will be implemented in time. However, in the event deadlines are not met, can you commit to working with me to ensure that we are not holding the economy and the health and safety of Americans hostage by threatening to embargo these commodities? We need to clarify that the common carrier commitment remains even if there is a failure to implement by the deadline.

My second concern has to do with short line railroads. Short line rail often serves the "first mile and last mile" of a shipment. I understand that some Class I railroads have informed short line railroads they will demand compliance with some of the PTC mandates, even though the short lines may not have any statutory or regulatory requirements to install equipment. Many short lines are simply not able to afford expensive new equipment, and I am concerned this could also threaten rail shipments for areas served by short lines. Will you work with me, and with rail shippers and short lines, to ensure that these railroads can continue to move the commodities critical to the economy?

AAR Response:

AAR has not addressed this question because its Class I members will meet the 2018 deadline. Section 1302 of the Surface Transportation Extension Act of 2015 requires that by December 31, 2018, railroads have sufficient spectrum, install needed PTC hardware, complete required training, and have implemented or commenced revenue service demonstration on a majority of its

subdivisions (or districts) or route miles. The Class I railroads will satisfy all these requirements.

It is in the railroads' interests to serve railroad customers. That is how they stay in business. Short lines are integral to the railroads' business model. Class I railroads have been working with their short line members and will continue to do so. At the same time, the railroads are striving to meet the public's expectation that PTC will be utilized on routes that are mandated to have PTC.

Submitted on behalf of Ranking Member Peter DeFazio (OR- 04)

1. You stated at the hearing that dark territory will be covered by PTC and automatic switch position indicators. The Federal Railroad Administration (FRA) maintains that PTC will be implemented on about 54,000 route miles in the United States in accordance with federal requirements. However, there will still be a reason the rail network where PTC will not be installed. Some of these areas- without PTC - will remain non- signaled, or dark territory. One major Class I railroad, for example, reported that about 1/3 of their network will remain in dark territory after PTC is implemented.

- Currently, how many route miles (estimated) in the United States are in dark territory?
- Once PTC is implemented, how many route miles (estimated) will be in non-PTC dark territory?
- What safety measures are in place to ensure safety in these non-PTC, non-signalized areas?

AAR Response:

According to the FRA's 2016 North American Rail Network data base, the total U.S. Class I main line network is 91,462 route miles. Of this, 20,674 route miles have an annual volume of less than 5 million gross ton-miles/per mile (mgt/m) which would make them exempt from PTC installation. Of these miles, 12,888 are non-signalized and represent very light density branch lines or industrial access lines. Additionally, there are 5,856 main line route miles which have annual volumes above the 5 mgt/m threshold which would be subject to the PTC law if they handle more than a minimal volume (as defined by the FRA) of TIH material or are utilized by passenger trains.

Thus, there will be a minimum of 12,888 route miles which will not have PTC because they are not subject to the legislation (<5mgt/m). There will be some portion of the 13,642 route miles (>5mgt/m) that will need PTC because it supports either passenger or TIH service, or both. So, a minimum of 12,888 miles will not have PTC because it has very low train density.

Most of the remaining 13,642 miles that are above the statutory threshold are also low train density lines but lines with very heavy trains. However, it is clear that some portions of this mileage will need PTC. We don't know what that portion is, only that it exists.

A very quick check of some of the Western road's subdivisions easily produced 2,800 miles of moderate to heavily used main line that would need PTC. Thus, the expectation would be that the miles remaining without PTC that are non-signalized would be 12,888 with traffic less than 5 mgt/m and about 5,000 to 8,000 that have greater than 5 mgt/m. This yields a total of about 18,000 to 21,000 miles of non-signalized route miles without PTC after current installation is complete.

	Total Miles	Signalized Miles	Non-signalized Miles
All Class 1 Route Miles	91,462	64,932	26,530
Class 1 Route Miles >5mgt/m	70,788	57,146	13,642
Class 1 Route Miles <5mgt/m	20,674	7,786	12,888

It is useful to understand how very low the 5 million gross ton-mile/per mile threshold really is. A single 100 car train operating a round trip on a line 6 day per week, with the freight cars loaded in one direction and empty in the other would easily generate 5.4 mgt/m annually and require installation of PTC if any of those freight cars contained TIH materials. Thus, the exemption of the 12,888 miles from PTC installation requires that extremely low movement volumes be present on these line segments.

Generally, line segments that have volumes above 5 mgt/m and are non-signalized also involve movements of a very limited number of trains over the line segment. For example, a 135-car coal train (the standard western size) operating over the line only four times a week would exceed the 5 mgt/m threshold but would not be subject to PTC installation, if that were the only traffic on the line.

There are approximately 18,744 route miles without signals. AAR does not have data on the amount of route miles without signals that will be equipped with PTC. Where PTC is being installed in non-signal territory, switches must be upgraded to make them PTC compatible. Electricity must be brought to their locations and switches must be equipped with power and switch-position indicators installed.

Railroads today operate safely in non-signal territory and will continue to do so. Procedures include the control of trains by a dispatcher issuing track warrants authorizing the movement of trains and stringent rules requiring

verbal communication between crew members and dispatchers when the crew members operate a switch.

2. Aside from Section 130 funding, what more can Congress do to address grade crossing safety and trespasser prevention?

AAR Response:

The biggest safety issue facing the railroad industry is grade crossing and trespasser accidents. Some 95 percent of railroad fatalities are either grade-crossing users or trespassers. In 2017, there were 1,880 grade crossing accidents involving 243 fatalities and 552 trespasser fatalities in the first 11 months of the year.

There are currently 210,100 grade crossings, of which 129,384 intersect with public roads (Aug 2017). The Rail-Highway Crossings Hazard Elimination Program (Section 130) is a federally-funded, state-administered program under the Federal Highways Administration at USDOT aimed at providing warning devices at grade crossings. Funding for this program for FY 2018 is \$235 million, distributed to the states by formula. Congress could consider increasing the funding for this program, as well as incentivizing states to close crossings where possible. After all, the safest grade crossing is one that does not exist.

In addition to funding the FHWA section 130 program, Congress can support efforts to educate the public about the dangers of trespassing and failing to abide by grade-crossing warnings. One such effort is Operation Lifesaver, Inc., a nonprofit organization that focuses on educating the public about trespassing and grade-crossing dangers. AAR railroads – members of Operation Lifesaver, Inc. as well, are longtime financial and logistical supporters of the organization. Congress could also encourage the acceleration of the deployment of navigational device warnings for motorists, pedestrians, and bicyclists (within vehicles, smart phones, variable messaging signs). Hearings could be convened on current progress made by technology companies to alert motorists and pedestrians of railroad crossings.

Other actions that Congress could support include incentivizing enhanced enforcement of motorists' safety at grade crossings; incentivizing grade separation public-private partnerships; enhances accountability for grade crossing accidents within state DOTs and encouraging the avoidance of future grade crossing conflicts with better land use planning.

Finally, DOT should update its guidance on Automated Driving Systems (aka autonomous vehicles) to encourage/require entities to include the ability to

recognize railroad grade crossings and take appropriate action when crossings are activated as part of their Object and Event Detection Response functions.

Submitted on behalf of Congressman Daniel Lipinski (IL - 03)

1. How secure is PTC technology from cyberattacks?

AAR Response:

PTC is designed with cryptographic protection, as required by the FRA, which makes hacking more difficult. The PTC system is able to authenticate messages and discard stale or corrupted data regardless of the source, even hacked messages. Furthermore, industry has been continuously evaluating weaknesses and strengthening the security of the system. The industry has engaged recognized experts such as the Lawrence Livermore National Labs to identify security enhancements. Work continues to this day based on the findings and recommendations.

Submitted on behalf of Congressman Rick Larsen (WA- 02)

2. In your testimony, you state that all Class I railroads will have completed PTC implementation by December 31, 2018. However, installation does not mean implementation or that the system will be fully operational. Which Class I railroads will have fully implemented PTC by December 31, 2018, and which Class I railroads will likely apply for an extension? Which short line or regional freight railroads will have fully implemented PTC by December 31, 2018, and which short line or regional railroads will likely apply for an extension?

AAR Response:

To clarify, all Class I railroads will have 100 percent of wayside and locomotive equipment fully installed, along with all other statutorily required milestones, by the end of 2018. It is unclear which railroads will have “fully implemented” PTC by the end of this year. One reason is that FRA has yet to define what “fully implemented” means. For example, there are Class I railroads that expect to be operating with PTC on all their lines by the end of 2018, but some of their tenant railroads will not be ready. As 2018 progresses, each railroad will continue to evaluate its progress against its plan, and work with the FRA to determine how the “early adoption” provisions of the 2015 law will apply. Regarding short line and regional railroad progress, the 2015 law extended these railroads’ PTC deadlines until December 31, 2023. AAR does not maintain accurate data on short line and regional railroad PTC implementation progress to date.

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Testimony by

Richard Anderson

President & Chief Executive Officer

National Railroad Passenger Corporation



Before The

United States House of Representatives

Committee on Transportation & Infrastructure

Subcommittee on Railroads, Pipelines, and Hazardous Materials

Oversight of Positive Train Control Implementation in the United States

February 15, 2018

Amtrak

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Good morning, and thank you Chairman Denham, Ranking Member Capuano, and all of the members of this Subcommittee for holding this hearing on rail safety and Positive Train Control. My name is Richard Anderson, and I serve as the President and Chief Executive Officer of Amtrak. My term as CEO began January 1 and, prior to this, I served as Co-CEO with Wick Moorman since July. Previously, I served as the CEO for Delta Air Lines, CEO for Northwest Airlines, and the President of Commercial Business at United Health Group.

Amtrak is committed to running the safest rail system for our customers and our employees. We have seen what can be achieved when stakeholders work together toward a common goal, as demonstrated by the commercial aviation system which last year achieved the remarkable feat of zero passenger fatalities. Amtrak has achieved strong results in the past and can and must do the same again for the intercity passenger rail industry.

Sadly, the recent incidents have demonstrated that we are far from that goal today. Though the circumstances of each of these accidents are quite different, the tragic derailment of Train 501 near DuPont, Washington, the grade-crossing incident near Crozet, Virginia, which impacted many of your colleagues, and most recently, the collision between Amtrak Train 91 and a CSX freight passenger train near Cayce, South Carolina remind us that there are still too many gaps in the U.S. rail network's current safety systems.

I am here today to pledge to you that, despite these incidents, Amtrak is a safe railroad that is becoming safer each day. All of us at Amtrak are doing all that we can with the resources we have to make sure that incidents like these don't occur again. I will chronicle some of the many steps we've taken in response to these varied incidents and, more generally, describe our work to adopt a more predictive and global approach to safety. I will also present areas where broader policy discussion and greater resources are needed to strengthen safety across the diverse network of freight and commuter railroads that host the vast majority of Amtrak's route miles.

Positive Train Control

One of the most critical tools that the rail industry needs to vastly improve safety is the prompt implementation of Positive Train Control (PTC) technology. Amtrak is confident that the installation of PTC on the required routes nationwide will make the entire U.S. rail network safer for passengers, railroad employees, and the cities and towns which the national rail network traverses.

Amtrak has long been a leader in the installation of PTC, having already deployed systems almost universally where we control the tracks including on most of the Northeast Corridor (NEC), the busiest railroad in North America. As we've already pledged in a letter to Transportation Secretary Chao, we are set to complete the installation of PTC on the few remaining elements of the infrastructure we control and on all of our equipment by the December 31, 2018 Federal deadline.

For the tracks we use but do not own or control, we are cooperating with our freight and commuter host railroads as they advance their obligations to complete PTC installations, which are required either because of the presence of our trains or the haulage of certain hazardous material. Additionally, the various freight and commuter railroads that operate over Amtrak's infrastructure must equip their rolling stock with PTC for use on our railroad and we are working cooperatively with them to advance these tasks.

PTC in Context

Railway operations in the United States are complicated, with multiple companies and agencies required to cooperate closely to ensure the safe, reliable, timely operation of various types of trains across differing networks. To integrate PTC into this complex environment has been a significant undertaking for the industry and its suppliers. While Amtrak has been eager to bring this technology online, it has been a difficult process and has required the dedication of significant resources, both in terms of funding and of our personnel.

To place PTC in its proper context, permit me to explain how PTC is designed and how Amtrak operates. PTC relies on three interdependent elements, all of which must be in place for the system to function. The first includes equipment that must be installed on the locomotives by owners and operators. Second, trackside equipment must be installed by host railroads along the protected routes that monitor signals, switches, and track circuits. Third, there are computer systems, called back office servers (BOS), which link the locomotives and the trackside equipment while integrating more information about the network. Additionally, each host railroad and rail operator must have a BOS and it needs to be correctly integrated before the system can be operational. All of this must be done in the proper sequence, and for the carriers required to use the system, it must be achieved in accordance with the timetables set by law.

Locomotive Installation

The first part of a PTC system is the equipment installed on locomotives and cab cars, which monitors a train's position and speed and activates braking as necessary to ensure compliance with speed restriction and territorial limits. The complexity of our operations requires Amtrak to use three different PTC systems across our network. Since 2000, Amtrak's Northeast Corridor operations permitted to exceed 125 mph have depended on our first form of PTC called Advanced Civil Speed Enforcement System, or ACSES. By the end of 2015, to meet the original deadline of the 2008 Rail Safety Improvement Act, Amtrak had enabled ACSES for all our locomotives, cab cars and trainsets operating on the NEC. For equipment that operates on a 98-mile stretch of track Amtrak owns in Michigan and to permit higher speed operation on the newly purchased and upgraded line owned by the State, we have installed a second form of PTC equipment, called ITCS.

Finally, to operate across the other host railroads that make up 72 percent of the miles our trains travel, we are also installing a third form of PTC in our locomotives to integrate with the I-ETMS system in use by freight railroads. Having already PTC commissioned 338 units, we are on target to have 447 Amtrak-owned units fully commissioned and ready to operate before the December 31, 2018, deadline. Apart from our locomotives and rolling stock, several of our state partners also own their own equipment which we operate and maintain. Amtrak is working with these owners and various suppliers to help achieve compliance prior to year's end.

Trackside Equipment

The second part of a PTC system is the trackside equipment, which monitors railroad track signals, switches, and track circuits. By law, each railroad owner is responsible for installation of PTC equipment on the tracks within their rights-of-way. Additionally, the hosts are responsible for reporting their PTC trackside readiness schedule to the Federal Railroad Administration (FRA). Amtrak is working with the host railroads to develop an implementation schedule for PTC integration and testing. While 13 out of 20 host railroads that will be using I-ETMS have not provided a notice of intent to start PTC testing, the four Class I railroads that own the majority of the track over which Amtrak operates (BNSF, CSX, NS, and UP) have all provided letters of intent.

Regarding the trackside installations for which Amtrak is responsible, Amtrak completed the ACSES PTC implementation on all but a few miles near terminals and stations on the NEC in December 2015 and on the Harrisburg Line during the first quarter of calendar year 2016. On our Michigan Line, trackside PTC implementation on our segment was fully completed in 2011 and the State-owned portion of our route to Detroit will be completed by June 2018. Installation of the ACSES PTC system on Amtrak's Springfield Line will be completed by late Fall 2018 and we will soon begin hardware installation on the portions of the Hudson Line in New York which we control, with implementation expected by December 31, 2018.

Back Office Servers (BOS)

The third part of a PTC system is the back office server, which stores all information related to the rail network and trains, and transmits authorization for individual train movements. Each host railroad and each rail operator will have a BOS that enables the necessary information exchanges. For a BOS to be operational, the tenant who operates over a host railroad must establish a dedicated two-way communication link between their BOS and the host BOS, a process known in the field as federation. Amtrak's ACSES system does not require a BOS, so Amtrak only needs a BOS for its ITCS system in Michigan and its I-ETMS operations over freight hosts. Amtrak's BOS will pass crew and train information to the host railroad system, as well as to the locomotives themselves. Operability of Amtrak's BOS is currently scheduled for April 2018,

though we are looking to accelerate its delivery through our vendors. Once it is operable, federation with the BOS of each individual host railroad must commence before PTC operations can occur.

Next Steps for PTC Implementation

While PTC relies on completing these three components, the next vital steps in deploying PTC include testing and training. Once Amtrak and a host have linked their BOS units, testing of the system will proceed, beginning this spring, to verify functionality along with system interoperability testing to ensure that all of the disparate components work together correctly. As for training, Amtrak is implementing a training plan for 1,300 locomotive engineers and 2,200 conductors that includes classroom training and, once the PTC system is active, field training. We are taking steps as part of this training to prepare our employees for what will likely be the phased deployment on routes as different hosts and territories are brought online.

This phased implementation brings us to a number of challenging policy questions facing Amtrak, FRA, Congress and the various railroads we interact with across our network. It is now clear that we are likely to encounter four different scenarios where PTC is not yet operational by the end of the year.

First, there will be carriers that have made sufficient progress to apply to FRA for an alternative PTC implementation schedule under the law. In these instances, Amtrak's equipment will be ready for PTC operation, but additional work, testing or approvals are still required by the host railroad before the system is considered functional. We believe a significant number of routes outside of the NEC will face this situation. The question we must ask ourselves is whether we continue to operate over such routes until PTC is turned on and if so, what additional safety protections are appropriate to reduce risks?

Second, there will be carriers over which we operate who appear unlikely to achieve sufficient progress to apply for an alternative PTC implementation schedule by year's end. For any such route segments, Amtrak will suspend operations until such time as the carrier becomes compliant with the law.

Third, there are areas over which we operate for which there is an FRA "Mainline Track Exclusion" in place exempting that segment from the PTC requirements based on the low levels of freight and passenger train traffic or the presence of low-speed operations, such as in yards and terminals. We are currently reviewing our policy on operating passenger trains on Exclusions to determine whether we have adequate safety mitigation practices in place for each territory and in certain areas, where signal systems are not in place, we will reconsider whether we operate at all.

Lastly, there may be railroads that operate over Amtrak tracks in the NEC which may not have sufficient PTC-commissioned rolling stock by the December 31, 2018 deadline to operate

normal services. Under the present rules, Amtrak cannot permit non-compliant equipment to be used over our railroad after the deadline and we will be working closely with our partners and the FRA to determine the best way to address this situation.

As we prepare to operate in a PTC environment, I do think it is worth noting that PTC was designed to address specific vulnerabilities in train operations – train-to-train collisions, over-speed derailments, incursions into work zones, and misaligned switches. Thus, PTC is not a complete technology answer as there are events that PTC does not address –such as when a car or truck crosses over tracks at a crossing, certain track defects, or other incidents like rockslides.

I raise this not to take anything away from PTC and the important capabilities it offers the rail industry, but simply to be clear about how we cannot rely on PTC alone. Safety depends on the hard work and vigilance of thousands of our trained and dedicated employees and on the appropriate levels of investments being made in the network's infrastructure. For instance, while the number of total U.S. train accidents has declined by 14 percent over the past four years and accidents involving passenger trains accounted for only 2.5 percent of all accidents, according to the FRA rail safety database, grade crossing and trespasser incidents remain high. In 2017, there were 1,880 grade crossing accidents involving 243 fatalities and a separate 552 trespasser fatalities. PTC will help protect against many of the human factors-caused accidents that occur across the U.S. rail system, but having made progress against this vulnerability, we must also turn our attention and, the attention of the highway and motorist communities, to the startling loss of life that occurs on a daily basis when motorists and pedestrians occupy the right of way ahead of a train.

Safety and Amtrak

Amtrak, as the nation's intercity passenger rail carrier, has long recognized our unique requirement to have strong protocols in place to make riding the rails safe. In many areas, we go above and beyond FRA requirements and industry practice. For example, Amtrak requires a full annual physical evaluation for every engineer, including sleep apnea screening, whereas FRA simply requires an exam once every three years. Amtrak requires that newly promoted engineers are evaluated monthly for their first year of service, whereas FRA has no special requirements for evaluation of newly promoted engineers. Amtrak engineers and conductors are required to attend annual training for recertification, whereas FRA only requires full recertification every three years. In addition, Amtrak's drug and alcohol testing protocols exceed federal requirements. Our testing regimen is so strenuous that employees understand that a random drug test in the course of the year is not just possible, it is likely.

We're also taking other steps, such as installing inward-facing cameras. These cameras monitor locomotive and engineer performance and are installed in Amtrak trains along routes in the Northeast, Midwest, and West and we are actively working to install them on Amtrak trains nationwide. Reviewing the data from these cameras, coupled with the data from our efficiency

testing programs, provides us an excellent view of operational issues to be addressed in future training programs.

While many of these efforts draw on safety practices used by some of our partners in the freight rail industry, since we are carrying people, we believe we must also draw on the expertise of other safety-critical industries. Our goal is to build upon our good practices and take them to the next level to deliver the world-class safety that our customers deserve and expect.

To put us on the path to reach that goal, just last month Amtrak hired a new Executive Vice President and Chief Safety Officer, Ken Hylander. Ken is a widely respected member of the transportation safety community with more than thirty years of service – in addition to being a former colleague of mine at Delta Airlines. Ken reports directly to me to ensure his position has full authority and maximum impact. Amtrak has consolidated several previously separate resources, including System Safety, Compliance and Training, Environmental Compliance, Sustainability, and Public Health underneath him.

Safety Management System (SMS)

Ken's primary objective will be to implement a Safety Management Systems (SMS) to improve our safety culture. SMS will revitalize Amtrak's safety programs by primarily strengthening hazard identification and complimentary mitigation programs. An SMS is a proactive risk management system, which will move us toward a more predictive safety management method at an organizational level. Having a safety culture that continually identifies, and mitigates, future risk is the proven way to improve overall safety performance. It has been a cornerstone of improving safety in many industries, including aviation, health care, and energy – and it is also the right system for Amtrak.

A positive safety culture means an organization that easily facilitates and is receptive to safety discussions; that is committed to and practices risk reduction; that recognizes and accepts a healthy balance between centralized policy and procedure control and the value of local knowledge. A safety culture requires the reporting of safety issues at all levels. It is intolerant of recklessness and willful disregard for safety practices and learns from its mistakes. Safety culture emerges over time. Daily decisions and actual practice will define our culture. A good safety culture and a successful SMS are interdependent.

We will know as a company that we have arrived at a good SMS when we 1) have better safety data available for decision making, 2) can analyze safety risks before we do something, not after; and 3) have closed-loop processes that find hazards, mitigates them, and verifies efficacy. Additionally, our safety processes will be fully integrated into our organizational decision-making and supported by strong oversight to ensure compliance with the practices we want to implement. At a personal level each Amtrak employee will know his or her role in the safety process.

We know that implementation of an SMS is a significant undertaking – it requires our organizational commitment. SMS demands that all safety related procedures must be carefully documented, universally understood, and unfailingly applied. SMS is designed to advance that outcome by formalizing our knowledge into processes, checklists, and governing documentation to improve consistency. Amtrak believes the implementation of SMS will truly take our safety performance to the highest level of service. These efforts are in line with the NTSB's recommendation that Amtrak and our unions implement a SMS Program and generally consistent with the Risk Reduction Program approach mandated by this Committee in the 2008 Rail Safety Improvement Act and required by FRA through the development of a System Safety Program.

Conclusion

When the Amtrak board asked me to lead their railroad, they did so with the expectation that I would bring an outsider's perspective to the business. This mandate, combined with the events of the past few months, compels me to examine our business practices and think carefully about ways in which an elevated safety focus would alter how we operate. Some of these changes have been made, and several more of them are now underway. Let me present some examples.

We are changing our policies on operating on host railroad territories with temporarily inoperable signal systems. While we are evaluating two different approaches, they both boil down to reducing speed significantly in these circumstances in advance of known hazards. While we see such a change as fully warranted, they may result in operational impacts to our host railroads and our trains, and we will need to work with our hosts to determine the best ways to minimize those impacts.

Building on the changes to our operations when signals are unavailable, Amtrak will change how we operate through sections of track with no signals at all, so-called 'dark territory,' which is also exempted from the PTC mandate. Approximately 1 percent of our current or planned routes transit through dark territory, totaling 222 miles in Indiana, Maine, New York, Quebec, and Vermont. We believe it is time to reevaluate the risks that accompany such operations and adopt a new approach, particularly as the implementation of PTC will provide even greater safety margins beyond traditional railroad signaling on the vast majority of our routes. Based on hazard analyses and mitigation options, the application of new technologies like switch position indicators; altered operating practices; signal system and PTC investments or rerouting or route abandonments may all be appropriate for such dark territory. Working together with our host railroads and local stakeholders, we need to quickly evaluate the risks and take the necessary steps to ensure we don't leave sections of our network unnecessarily vulnerable.

Amtrak is organizing a centralized standards, training, and quality assurance organization for engineers and conductors moving away from a former regional approach to training and safety oversight. Our aim is a more robust, consistent, and unified approach to these issues,

which will serve as a vital resource across our network. Similarly, immediately following the December derailment of Train 501, we adopted a new policy that requires approval from the heads of our operations and safety departments before our personnel operate over new or modified routes. While Amtrak had general procedures for new routes prior to that incident, they were managed regionally and we believe a central review by our safety and operating experts and a single array of consistent standards will strengthen outcomes.

A related initiative is the revamping of our trainmaster and road foreman staffing to provide more support and training for our engineers and conductors. These positions directly manage our front-line employees who operate our trains and we are re-thinking our qualification training standards and identifying the additional resources – both manpower and technology – to enable our crews to benefit from industry leading approaches to procedural and operational training regimens. We will look carefully at how the commercial aviation industry has applied simulation, and more recently, virtual reality as well as augmented reality, to make our training more realistic and more effective to serve our crews and customers better.

Strengthening safety is a continuous process. Amtrak's responsibility is to lead safety across our industry and serve as good stewards of the vital resources that we receive from Congress and the Administration to help us implement these advancements. Likewise, railroads alone can't solve all of the issues, as grade crossing and trespasser accidents require a broader effort of local, state and Federal stakeholders to educate motorists and pedestrians, better equip vulnerable crossings, limit public access to rights of way and strengthen enforcement.

I have great confidence in Amtrak's dedicated workforce and the commitment I see across our company to become the safest passenger railroad in North America, but there is work to be done to improve the entire rail system. While the challenges described today are difficult, they can be overcome. At Amtrak, we owe our customers nothing less.

Thank you for the opportunity to appear before you today, and I welcome your questions.

"Oversight of Positive Train Control Implementation in the United States"

Thursday, February 15, 2018, 10:00 a.m.

2167 Rayburn House Office Building

Washington, D.C.

Responses to Questions for the Record from Richard Anderson,

President & CEO, Amtrak

Submitted on behalf of Subcommittee Chairman Jeff Denham (CA-10)

1. *If no further guidance from the Federal Rail Administration (FRA) is provided, can you describe the factors involved in the decision making of whether to operate on an inoperable host track after the deadline?* If the track is not compliant with the law, we will not operate. If the railroad is granted an alternative schedule by the FRA (extension), we will do a risk assessment to see if we feel we can operate safely or if we have to mitigate any risks before we would choose to operate. We also may not choose to operate.
 - *Have you asked any of your host railroads to file Main Track Exclusion requests on your behalf? If so, have any been granted? If not, do you still intend to pursue these requests?* We have several Main Train Exclusions that have been requested or granted. This list is included as Attachment 1.
 - *Can you please describe the factors involved in the decision making of whether to allow inoperable tenant rail systems to operate on Amtrak-owned track like the Northeast Corridor (NEC)?* All tenant railroads need to be equipped to operate on the NEC after 12/31/18 to be compliant with the law.
 - *Have any of your tenant rail systems requested Amtrak file a Main Track Exclusion on their behalf?* No tenants have asked Amtrak to file an extension on their behalf.
2. *Where is Amtrak on the development and testing of its back-office server to communicate with the I-ETMS system?* The back office server has been developed and tested. We are currently federated with four of the Class I railroads and have federation scheduled with several additional railroads.
3. *Do you have the resources to test with each railroad at the same time or are you having to prioritize between them?* We have the ability to work with railroads in parallel.
 - *Given each Class I has Amtrak lines in revenue service today, what is your current testing schedule with each Class I?* We are currently testing with several Class I railroads and this will continue through the fall.
 - *What is your current testing schedule with each commuter railroads on the NEC?* Many of the commuter railroads are already operating with PTC in service on the

NEC. For the three commuter railroads that are not operating (LIRR, NJT, and MARC) we are currently working with them to develop the testing schedules.

Submitted on behalf of Ranking Member Peter DeFazio (OR-04)

1. *At the hearing you stated with respect to liability and indemnification agreements with host railroads, "The user of the railroad indemnifies the host." Indeed, a 2009 Government Accountability Office report stated that most liability and indemnity provisions assign liability to a particular entity regardless of fault—that is, passenger railroads could be responsible for paying for certain claims associated with accidents caused by a freight railroad, and vice versa. Commuter railroads could also be responsible for paying for certain claims associated with accidents caused by Amtrak, and vice versa.*
 - *How have federal and state courts and the Surface Transportation Board interpreted the contractual liability and indemnity provisions of Amtrak and freight railroad agreements?* As a general matter, courts have upheld the allocation of liability provisions contained in Amtrak's agreements with its hosts (e.g., freight railroads on whose trackage Amtrak operates) and its tenants (e.g., commuter railroads which operate on Amtrak-owned trackage). While some lower courts have at times refused to impose "no-fault" liability, appellate courts have uniformly upheld it as a contractual agreement. See, for example, *O & G Industries, Inc. v. National Railroad Passenger Corporation*, 537 F. 3d 153 (2d Cir. 2008). In a 1998 decision, the Surface Transportation Board declined to impose a pure no-fault liability in a situation where Amtrak and the host railroad could not agree on what liability scheme should apply. The STB held that residual damages arising out of Amtrak operations were incremental (i.e., payable by Amtrak) without regard to fault, subject to an exclusion for the host's gross negligence or willful and wanton misconduct; and that Amtrak had to either indemnify the host railroad, purchase insurance, or both. See, *Application of NRPC under 49 USC 24308(a)*, STB Finance Docket No. 33381, 3 S.T.B. 157 (1998).
 - *With respect to the Cayce, South Carolina accident, please describe the liability and indemnity agreement between Amtrak and CSX. Does the agreement have all or some no-fault provisions, and does it exclude any type of conduct? If it does have exclusions, please also provide information on the exclusions.* The liability arrangement between Amtrak and CSXT is one that is fairly standard in Amtrak's agreements with its host railroads. Each party assumes – on a no-fault basis – liability for (and indemnifies the other party against) injuries to its own employees and passengers, and damages to or destruction of its own property. There are exceptions to this basic rule that address specific fact situations, e.g., CSXT

indemnifies Amtrak if a person at a station is struck by improperly secured cargo on a CSXT freight train, Amtrak indemnifies CSXT for cleaning up fuel oil that is spilled by an Amtrak contractor while fueling an Amtrak train, Amtrak indemnifies CSXT for damages or injuries in connection with a collision of a vehicle or person with an Amtrak train or a collision of a derailed Amtrak train with any person, property or object off of the right of way. There are no exclusions for qualitative issues such as gross negligence, willful, wanton or intentional misconduct, or conduct that might result in the imposition of punitive damages.

- *What date was the liability and indemnity agreement between Amtrak and CSX entered into? When was the last time the agreement was revisited? What changes were made, if any?* The current Amtrak/CSXT Agreement is dated June 1, 1999. The only amendment, executed in 2004, provided that termination would require sixty (60) days' advance notice to the other party. The original agreement required twelve (12) months' advance notice.
- *Please provide a description of each of the agreements between Amtrak and the freight railroads (by freight railroad) and Amtrak and commuter railroads (by commuter railroad), including whether the agreements have some or all no-fault provisions and whether the agreement has any exclusions, such as gross negligence, recklessness, willful and wanton misconduct, intentional misconduct, or conduct so serious that it warranted the imposition of punitive damages. If they do have exclusions, please provide information on the types of exclusions by railroad.* Listed below are the host railroads and commuter agencies with which Amtrak has operating agreements. Most of these agreements allocate liability in a manner that is similar to that in contained in the Amtrak/CSXT operating agreement, i.e., each party assumes liability, and indemnifies the other party on a no-fault basis for injuries to its own employees and passengers and damages to or destruction of its own property. It is important to recognize, however, that the contractual provisions addressing liability and indemnification can be complex, and are typically several pages long, such that the individual agreements must be reviewed and analyzed to determine with precision the terms, provisions, and exclusions.

No.	Operating Agreement (Contain Liability Allocation)
1	Belt Railway of Chicago
2	BNSF Railway Company
3	Buckingham Branch
4	Canadian National - Canada (<i>Adirondack</i>)
5	Canadian National – US
6	Canadian Pacific - Delaware & Hudson
7	Canadian Pacific - SOO Line
8	Conrail
9	CSX Transportation
10	Denver Union Terminal
11	Florida DOT (SFRTA Corridor)
12	Florida DOT (Sunrail Corridor) (2011)
13	Florida East Coast (Executed, Not active, Not in use)
14	Golden Isles Terminal RR - Savannah
15	Iowa Pacific Holdings (2015, Dormant)
16	Kansas City Terminal
17	Massachusetts DOT (2015, Knowledge Corridor)
18	MBTA (Downeaster)
19	METRA
20	Metro North Hudson Line
21	Metro North New Haven Line
22	Minnesota Commercial
23	New England Central
24	NMDOT
25	Norfolk Southern
26	North County Transit District
27	Pan Am Railways (<i>Downeaster</i>)
28	Portland Terminal Railroad Company
29	Sound Transit (2017)
30	Southern California Regional Rail Authority
31	Trinity Rail Express (2015)
32	TRRA
33	Union Pacific
34	Vermont Railway

Liability Allocation Agreements	
1	Fort Worth and Western (over TRE)
2	Kansas City Southern (System)
3	Pan Am (on Knowledge Corridor)
4	Tacoma Rail (on Sound Transit)

On-Amtrak Operating Agreements (Contain Liability Allocation)	
1	Canadian Pacific (Hudson Line) (Dormant)
2	Connecticut Southern
3	Conrail On-Corridor (Conrail + CSXT)
4	NS (Conrail) on Amtrak Michigan Line
5	NS On-Corridor
6	Providence and Worcester
7	South Shore (CSS&SB on Amtrak Michigan Line)
8	Springfield Terminal (Springfield Line)

On-Amtrak Operating Agreements with Commuter Agencies	
1	Virginia Railway Express
2	MARC (Maryland)
3	Delaware DOT
4	SEPTA
5	New Jersey Transit
6	Long Island Rail Road
7	Metro-North Railroad
8	Shore-Line East (CDOT)
9	MBTA

- *What factors influence negotiations of liability and indemnity provisions?*
Multiple factors come into play when negotiating liability and indemnity provisions. Probably the most important is a desire on the part of Amtrak and its hosts and tenants to reduce costs and to avoid fighting among themselves. Both of these can be achieved with a no-fault indemnity scheme. Necessarily, Amtrak has a long-term relationship with its hosts and tenants; these are not agreements to cover a single incident or brief time period. As a result, Amtrak believes it is in its

best interest to avoid, where possible, creating situations where it and its host/tenants are adversarial. The no-fault scheme accomplishes that, while at the same time reducing transaction costs. Like any compromise, one can posit situations where another solution would have better results, but overall, and based on over 45 years' experience, Amtrak believes that no-fault works best for it in its operating agreements with host and tenant railroads.

In addition, the public and Amtrak's passengers are well served by the railroads avoiding liability fights among themselves. For example, in addition to saving substantial legal fees and expenses, this permits the prompt resolution of claims and lawsuits filed by passengers, employees and third parties who are injured. It also avoids finger pointing in governmental investigations conducted by the NTSB and FRA following major accidents. The railroads' excess insurers understand the cost saving advantage of these no-fault arrangements and their underwriting reflects that. Finally, Congress has recognized the wisdom of allowing railroads to apportion liability by enacting subsection (b) of 49 USC 28103, which states that "[a] provider of rail passenger transportation may enter into contracts that allocate financial responsibility for claims."

2. In October 2017, the FRA sent a letter to Amtrak stating the "FRA is aware of at least 50 locations along the Northeast Corridor that require the installation of split-point derails under Title 49 CFR § 236.1 007(b)(2). FRA also stated that it expects Amtrak to explain how it will mitigate the consequences of an incursion where the required protection is not present and to provide a detailed schedule of how it will bring these locations into compliance with 49 CFR § 236.1 007(b)(2). In response to FRA's August 31, 2017, letter, Amtrak submitted a September 22, 2017, letter identifying and listing 54 specific locations along the Northeast Corridor where Amtrak will install a split-point derail with a T20 switch machine and electric lock to protect the main line track from unauthorized or unintended entry under 49 CFR § 236.1 007(b)(2). Amtrak stated that these installations will be completed at all 54 locations by December 31, 2018. Amtrak also provided a list of all 54 locations that would require these installations. FRA appreciates that Amtrak is committed to installing the split-point derails by December 31, 2018, as FRA's regulations require. As a condition of FRA's PTC System Certification of Amtrak's ACSES II PTC system, FRA hereby additionally requires Amtrak to demonstrate to FRA that it is taking sufficient action to comply with the requirements under 49 CFR § 236.1 007(b)(2). See 49 CFR § 236.1 009(g)(1). Specifically, FRA is now requiring Amtrak to provide to FRA a quarterly status report on Amtrak's progress installing the required split-point derails with a T20 switch machine and electric locks at the 54 locations specified in Amtrak's September 22, 2017 letter.

- *What is Amtrak's status on installing the required split-point derails with a T20 switch machine and electric locks at the 54 locations specified in the letter?* 29% of the derail locations are complete.
 - *What is Amtrak's plan to install the remaining derails?* All the derail locations will be completed by the end of 4th quarter 2018.
3. *Given your experience in the airline industry, what are some of the differences in how the airline industry addresses safety in comparison to the rail industry?*

There are several significant items that define the difference between rail and aviation safety systems.

- a. First, aviation has made significant technology investments in areas of overall system control (Air traffic management), installed aircraft safety technology (Collision avoidance and ground proximity warning systems on every aircraft).
 - b. Second, the aviation system is essentially standard throughout the country. Every airport uses the same runway markings and the airspace management systems are consistent everywhere. A pilot only needs to know one system. In the railroad, our engineers must be knowledgeable in many different host railroad signal systems and rules.
 - c. Finally, the aviation system has already mandated and implemented a well thought out safety management system that was years in development. This is also an international standard.
 - d. Airlines are required to have mature equipment reliability and internal evaluation (critical self-assessment) systems. These requirements do not exist in the railroad system.
4. *You mentioned at the hearing, "We need to move to full simulation, instead of training people out on the railroad to move to the aviation model, and to basically operated the way an airline operates, with a standardized quality assurance training and standards organization." Can you explain that further?* Aviation safety systems utilize a sophisticated pilot training program protocol, both for initial and recurrent training, that relies on FAA certified instructor pilots, routine check flights by qualified check airman, and annual recurrent training that is skill- and need-driven. The railroads typically follow routine refresher training which is the same for everyone. One of the key differences in the recurrent training is the use of advanced simulation in aviation. Simulators allow pilots to practice, until perfection, complicated skills in all types of weather and flying conditions. In today's railroad, engineers are expected to be route qualified and to memorize significant physical characteristics. This occurs during actual train operations. There is no reason that this could not largely be done through simulation allowing for more efficient overall training and qualification procedures.

5. *You stated that you are standing up an aviation SMS system today at Amtrak. Can you describe that?*

. The FRA has mandated, and stayed, the rule to implement a System Safety Program. As noted in the preamble to the rule this is essentially similar to the Safety Management System that the FAA has mandated. SSP and SMS programs include the same four basic pillars:

- a. Safety Policy – The policies and procedures the company follows to ensure operations are safe. Implementation of the policy also helps define the company's safety culture.
- b. Risk Management – The hazard identification and risk mitigation process
- c. Safety Assurance – The system monitoring and quality assurance function
- d. Safety promotion – The education and training programs that support the intended safety culture

Submitted on behalf of Congressman John Faso (NY-19)

1. *Mr. Anderson, in your testimony you reference that Amtrak has over 200 miles of dark territory located on its routes in New York, Vermont, Indiana, Maine, and Quebec. Could you please detail where dark territory miles are located on these routes? What are the risks associated with dark territory? What does Amtrak plan to do to reduce risks associated with dark territory segments? (FASO)*

The dark territory is located:

- 1. Whitehall, NY – Rutland, VT (22 miles)
 - 2. East Northfield, MA – Brattleboro, VT (11 miles)
 - 3. North White River, VT – St. Albans, VT (117 miles)
 - 4. Crawfordsville, IN – Indianapolis, IN (33 miles)
- Amtrak will perform a risk assessment to see if we feel we can operate safely or if we have to mitigate any risks before we would choose to operate. We also may not choose to operate. (Note this adds up to 183 miles. There is an additional 56-mile possible future extension to the *Downeaster* service between Brunswick and Rockland, ME that we currently do not operate that would put this total over 200 miles).

Submitted by Subcommittee Ranking Member Michael Capuano (MA-07) on behalf of Congressman Denny Heck (WA-10)

Section 11406 of the Fixing America's Surface Transportation Act (P.L. 114-94, FAST Act) requires each railroad carrier providing intercity rail passenger transportation or commuter rail passenger transportation to survey its entire system and identify each curve, bridge, or tunnel requiring a reduction of more than 20 miles per hour from the approach speed and submit an action plan detailing steps the railroad will take to enhance safety at those locations. Has

Amtrak submitted any speed limit action plans to the United States Department of Transportation for review and approval, as required by law?

Yes, we submitted the information required on July 2, 2016 and the plan was accepted by the FRA on September 28, 2016. The plans contain a massive amount of detail and are not copied here. I did add the FRA approval letter.

Attachment 1: MTEA Candidates on Amtrak Routes as of March 13, 2018						
Amtrak Service	Segment	Start	End	Total	Host	MTEA Type
Southwest Chief	Isleta to Dalies	12.6	27.4	14.8	BNSF	Limited Operations Exception
	Dodge City to Las Animas Jct.	352.5	533.6	181.1		
	La Junta to Lamy (on BNSF)	554.9	834.0	279.1		
	Lamy to Madrid (NMRX)	834.0	858.0	24.0		
				499.0		
Vermont	Roxbury Subdivision (Windsor and St. Albans, Vt.)	0.0	132.0	132.0	NECR	Limited Operations Exception
	Palmer Subdivision (New London, Ma. and Windsor, Vt.)	110.5	169.4	58.9		
				190.9		
Coast Starlight	Newark to Elmhurst (Coast Subdivision) (Starlight only)	13.5	31.0	17.5	UP	Limited Operations Exception
	Gilroy to San Luis Obispo	77.0	248.5	171.5		
				189.0		
California Zephyr	Grand Junction to Mounds (Green River Subdivision)	452.0	603.9	151.9	UP	Limited Operations Exception
				151.9		
Cardinal	Orange – Gordonsville, Va.	0.0	9.1	9.1	Buckingham Branch/ Amtrak	Limited Operations Exception
	Gordonsville – Clifton Forge, Va.	160.4	276.1	115.7		
				124.8		
Texas Eagle	Cadet to Poplar Bluff (DeSoto Subdivision)	56.5	165.7	109.2	UP	Limited Operations Exception
				109.2		
Downeaster	Brunswick Branch (Yarmouth to Brunswick)	0.0	16.2	16.2	Pan Am	Limited Operations Exception
	Freight Main Line Track State Line/ Plaistow, N.H. to Portland, Me.	196.7	274.7	77.9		
	Freight Main Line Portland, Me. to Yarmouth	184.4	196.7	12.3		
	Boston Terminal/North Station	0.0	0.8	0.8	MBTA	Passenger Terminal Exception
	Mountain Branch	1.2	1.9	0.8		Limited Operations Exception
				108.0		
Vermont, Springfield Shuttles	Connecticut River Main Line (East Northfield to Springfield, wyeing only)	0.0	49.0	49.0	Pan Am	Limited Operations Exception
				49.0		
Ethan Allen	Rutland Running Track	54.1	55.0	0.9	Vermont Railway	Limited Operations Exception
	Northern Subdivision (Rutland Yard Limits)	55.0	55.9	0.9		
	Whitehall, N.Y. – Rutland, Vt.	77.5	99.8	22.3		
				24.1		
Lake Shore Limited	Post Road Branch	187.5	199.5	12.0	Amtrak	Limited Operations Exception
				12.0		
Wolverine	Townline to Vinewood	2.5	7.4	4.9	Conrail	Limited Operations Exception
				4.9		
Empire Builder	MP 0.0 – 1.6 (Main Running Track, F3 Track, and MNNR Main Industrial Lead)	0.0	1.4	1.4	Minnesota Commercial	Limited Operations Exception
Various	New Orleans Terminal (West Conn)	0.0	3.7	3.7	Amtrak	Passenger Terminal Exception
	New Orleans Terminal (East Conn)	2.3	3.8	1.6		
	Virginia Avenue Tunnel	136.0	137.1	1.1		
	Chicago Terminal (South)	0.0	0.7	0.7		
	Boston Terminal/ South Station	228.0	228.7	0.7		
	Harrisburg Station	104.6	105.2	0.6		
	Chicago Terminal (North)	0.0	0.6	0.6		
	Springfield Station	61.7	62.0	0.3		
	New York Penn Station			0.3		
	Washington Terminal	135.7	136.0	0.3		
				9.9		
Total Miles				1,474.0		

Some mileage figures may not add properly due to rounding.

TESTIMONY OF
PAUL P. SKOUTELAS
PRESIDENT AND CEO
AMERICAN PUBLIC TRANSPORTATION ASSOCIATION
BEFORE THE
SUBCOMMITTEE ON RAILROADS, PIPELINES AND HAZARDOUS MATERIALS
OF THE
HOUSE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
ON "OVERSIGHT OF POSITIVE TRAIN CONTROL IMPLEMENTATION IN THE
UNITED STATES"

FEBRUARY 15, 2018

SUBMITTED BY

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The American Public Transportation Association is a non-profit international association of more than 1,500 public and private member organizations, including transit systems and high-speed, intercity, and commuter rail operators; planning, design, construction, and finance firms; product and service providers; academic institutions, transit associations and state departments of transportation. APTA members serve the public interest by providing safe, efficient and economical transit services and products.

Introduction

Chairman Denham, Ranking Member Capuano, and members of the Railroads, Pipelines, and Hazardous Materials Subcommittee, on behalf of the American Public Transportation Association (APTA) and its more than 1,500-member organizations, I thank you for this opportunity to testify on the oversight of passenger and freight rail safety.

We appreciate the subcommittee's attention to the critical issues of rail safety and positive train control, and the challenges publicly-funded commuter railroads have encountered in implementing this technology.

My name is Paul Skoutelas, and I am the President and Chief Executive Officer of the American Public Transportation Association. Before joining APTA this January, I served in leadership positions on numerous boards and committees for transportation organizations, including on APTA's Board of Directors and Executive Committee, the Transportation Research Board, National Transit Institute, Pennsylvania Transportation Institute, and the Transit Cooperative Research Program.

Before APTA, I was national director of WSP USA's Transit & Rail Technical Excellence Center where I provided strategic direction on transit and rail projects.

Prior to WSP, I was the chief executive officer at two prominent public transportation agencies – the Port of Authority of Allegheny County, Pittsburgh, Pennsylvania, and the Central Florida Regional Transportation Authority (LYNX), Orlando, Florida. While heading these agencies, I oversaw the successful implementation of major capital programs including the South Hills Stage II Light Rail Program, the North Shore Rail Connector, a comprehensive rail station improvement program, major rail rolling stock acquisitions and three Bus Rapid Transit projects; the Airport/West Busway, the Martin Luther King, Jr. East Busway Extension and the Orlando/LYMMO BRT.

About APTA

The American Public Transportation Association (APTA) is a non-profit international association of more than 1,500 public and private member organizations, including transit systems and high-speed, intercity, and commuter rail operators; planning, design, construction, and finance firms; product and service providers; academic institutions, transit associations and state departments of transportation. APTA members serve the public interest by providing safe, efficient, and economical public transportation services and products.

Safety is APTA's number one priority. It is more than an operating principle and a promise to our riders; it is a core value of every APTA member. The men and women responsible for managing and operating public transportation systems are fully committed to the safety of their systems, passengers, employees and the general public.

Throughout our 136-year history, APTA and its predecessor associations have been leading advocates for safety improvements. We publicly supported the concept of positive train control

(PTC) prior to the Rail Safety Improvement Act (RSIA) of 2008, and we advised policymakers and members of Congress on the need for proven technology, adequate resources and an expanded radio spectrum necessary to put PTC into operation.

We are working with our member railroads to meet the law's requirements that all of the nation's commuter railroads have federally-approved systems that help protect against accidents that could be avoidable with PTC fully operational.

Public Transportation Industry Safety and Initiatives

Public transportation generally, and commuter and passenger rail specifically, are among the safest modes of transportation. In fact, the use of public transportation can reduce exposure to high-risk activities, particularly for groups with higher than average auto accidents and fatalities.

Commuter and intercity rail have 0.36 passenger fatalities per billion passenger miles, compared with 6.53 passenger fatalities for automobiles or light trucks.

According to the U.S. Department of Transportation's National Highway Traffic Safety Administration, the 2016 U.S. road fatality rate was 1.18 per 100 million vehicle miles traveled, and 11.59 per 100,000 population.

The Federal Railroad Administration's Office of Safety Analysis reports that of the more than 703 million passengers who travelled 110,541,557 miles on passenger rail systems in 2016, there were 267 recorded fatalities, most of which were not train passengers but rather individuals trespassing on tracks.

While PTC is the focus of this hearing, PTC is just one component of creating an effective safety culture. Safety begins with the commitment of the organization and senior leadership, working in collaboration with employees to adopt common safety goals and expectations.

The transit and commuter rail industries have been leaders on safety improvements during the more than 20-year period when standardized systems and procedures were developed to ensure safer service and work environments.

For example, APTA created a Rail Safety Audit Program in 1989 to develop and implement a uniform format for rail system safety and to provide assessments for a transit system to determine the degree to which safety issues were effectively being addressed. This program was subsequently adopted in 1996 by the U.S. Department of Transportation's Federal Transit Administration as the base guideline for its federal state safety oversight requirements. Today, all commuter rail agencies have Safety Management Program Plans, the frameworks of which are based upon APTA's Rail Transit Safety Audit Program.

APTA is an industry-recognized Standards Development Organization (SDO) and has published many transit standards. These industry-developed standards continue to contribute greatly to ongoing safety improvements. APTA has written more than 270 standards and recommended practices, 74 of which address particular safety needs for mainline passenger rail equipment and

111 for rail transit alone. For example, in the mid-1990's, APTA developed the Passenger Rail Equipment Safety Standards (PRESS) program to develop safety standards for commuter rail cars. These standards help improve the safety of public transportation systems by examining vehicle crashworthiness, passenger door systems, emergency lighting and evacuation, and new benchmarks to improve the safety of vehicle interiors including seat attachment strength and workstation tables.

Finally, APTA partners with the Federal Railroad Administration (FRA), Association of American Railroads (AAR) and labor organizations in developing regulations to help design, build, and operate safe transportation systems. In this regard, APTA is an active industry representative within the Rail Safety Advisory Committee (RSAC). Recently FRA and the public transportation industry collaborated on the language for new safety rules specific to high speed rail equipment. APTA and our commuter rail agencies will continue such cooperative efforts as we maintain a strong emphasis on safety.

Positive Train Control (PTC)

As the members of this committee are aware, the Rail Safety Improvement Act (RSIA) of 2008 mandated the installation of positive train control (PTC) technology on passenger railroad and certain freight railroads by December 31, 2015. Following numerous congressional hearings, industry analyses and a Government Accountability Office (GAO) report, Congress determined that it was necessary to extend the initial implementation deadline. Surface transportation authorization legislation passed in 2015 changed the PTC deadline to December 31, 2018. The statute also allows FRA to grant extensions up to 24 months for commuter railroads that have demonstrated sufficient progress toward complete installation. The specific milestones include installing all PTC hardware, acquiring all necessary spectrum, making sufficient progress on revenue service demonstration (RSD) and employee training, as well as submitting a revised schedule for completion. APTA has always supported the statutory deadline and is committed to assisting all our commuter railroads in the implementation of PTC.

As defined in the statute, a positive train control system is a “system designed to prevent train-to-train collisions, over speed derailments, incursions into established work zone limits, and the movement of a train through a switch left in the wrong position.” When RSIA was drafted in 2008, there was no off-the-shelf technology capable of achieving these safety objectives for all railroads. Many commuter railroads have long made use of collision avoidance systems that have helped protect against certain accidents in recent years. Since the enactment of RSIA, APTA and its commuter rail members across the country have aggressively pursued the funding and technology necessary to implement the PTC mandate by the statutory deadline.

Commuter railroads have faced, and continue to face, a variety of complex challenges in pursuit of compliance. PTC was still being developed and some forms of the technology were still in FRA's approval process at the time of the initial deadline. Only after the technology was available could railroads begin installing and testing the systems on an enormous and complicated network of interconnected railroads while still providing service to millions of Americans across the country.

Many commuter railroads have done a commendable job overcoming these significant hurdles, but others are continuing to grapple with implementation issues. Commuter rail systems provide important transportation in and around many of our metropolitan regions, and demand for commuter rail service continues to grow, especially as ridership increases.

PTC Technology Development

PTC is a predictive enforcement system of subsystems overlaid on existing systems. Though commuter railroads are currently in the process of installing these systems, a one-size-fits-all approach to implementation does not exist. Each commuter railroad has its own unique and complex operating environment and PTC systems must be tailored to meet those operating requirements.

For example, commuter railroads interoperating with freight railroads typically use a variant of PTC called I-ETMS. Other railroads without extensive freight interoperability requirements may use another variant called E-ATC. As such, what works for one commuter railroad may not work for another. This means that each passenger rail system needs to build its own unique PTC solution, and it is that absence of a proven, off-the-shelf technology that has created uncertainty about whether a new solution will work as intended.

PTC is deployed by passenger and commuter railroads in three (3) basic forms:

- 1) I-ETMS™ (Interoperable – Electronic Train Management System): Those railroads that share track with the freight railroads would need to install a system known as I-ETMS, a GPS based technology heavily dependent on the nationwide 200 MHz radio network. All wayside elements are monitored and reported to the locomotive. Track conditions and restrictions are delivered to the locomotive and reported to the operator for action. The system monitors the action of the operator and reacts if safety is compromised. I-ETMS supports interoperability with the freight carriers. I-ETMS received type approval from FRA on February 4th, 2015.
- 2) ACSES (Advanced Civil Speed Enforcement System): Those railroads that operate on the Northeast Corridor will be installing an Amtrak developed system known as ACSES, which uses track mounted transponders to deliver information to the locomotive. ACSES also monitors actions of the train operator and intervenes if safety is compromised. It also facilitates interoperability among operators on the Northeast corridor. ACSES variants received type approvals from FRA between 2010 and 2013.
- 3) E-ATC (Enhanced Automatic Train Control): Those railroads are typically smaller operations and do not require complex interoperability with other operators are installing a system known as E-ATC, a track circuit based system that is somewhat simpler and therefore less expensive than either I-ETMS or ACSES. E-ATC was the last major variant to receive approval from FRA, which occurred on March 11th, 2016.

In general, the following components are required for a complete installation of PTC:

Locomotives:

All locomotives and other operating equipment must be fitted with onboard computers, radios, display units, and event recorders. Numerous configurations of equipment are in service including self-propelled cars and push-pull equipment adding to the complexity and cost of deploying on board systems. Most of the equipment must be reconfigured to accommodate these components, which has led to higher costs and longer schedules to implement PTC than initially predicted.

Wayside:

The wayside equipment that needs to be installed is also extensive and includes Wayside Interface Units (WIU), switch monitors, wayside radios, base stations, and transponders (if required), among other components. All wayside components, such as switches and signals, are connected to WIUs, which are linked to either the locomotive or central control. The status of the components via WIUs is delivered to the locomotive to inform the operator. Many railroads were required to upgrade track components such as switches and signals to be reported by the WIUs. Commuter railroads face the same challenges in equipping the wayside components as do the freight railroads, but with far more limited development and testing resources.

Communications (Spectrum and Towers):

Spectrum was put in place after significant efforts by the public transportation industry. Many commuter railroads attempted to secure spectrum on the secondary market, only to encounter issues such as questions about ownership and legal authority to sell, unavailability in required geographic areas, and cost prohibitive contractual requirements. Some railroads contracted their spectrum usage to the host railroads on which they operate, which created other issues that needed to be addressed.

Public railroads also are subject to contractual constraints imposed by their local and state legislatures. Sole source procurements as required to implement PTC can take an exceedingly lengthy period of time to complete. Additionally, commuter railroads with small procurements as compared to freight railroads do not receive priority status in the procurement chain.

Back Office:

The back office stores millions of rail network data points as encrypted information (e.g., speed limits, track layouts, speed of other trains on the system, train compositions, etc.) and transmits the authorization for individual trains to move into new track segments. Operating PTC on commuter railroads present a variety of back office requirements. Those that dispatch their own and perhaps other trains need to invest in the complete set of upgraded dispatch systems and Back Office Servers (BOS). Some commuter railroads operate on a mix of tracks that are sometimes dispatched by other railroads.

Railroads installing I-ETMS are required to maintain extensive back office capability in order to interact with the overall PTC network. This capability is generally beyond the resources of commuter railroad operators. Recognizing this as a key constraint, APTA in conjunction with the FRA worked with the supply community to develop a cloud-based back office system. FRA provided approximately \$5 million in 2015 for this initiative. The shared back office provides

for efficient operations, software maintenance, communications software updates, train initialization, and other key features. Several suppliers now offer this service.

Employee Training:

All employees who perform dispatch, operations, signaling, as well as roadway workers and supervisors, must be trained and are essential for successful PTC implementation and operation.

Positive Train Control Progress

The commuter rail industry continues to make steady progress in implementing PTC according to updated analyses conducted by APTA. According to the most recent aggregated data from the fourth quarter of 2017:

- 89 percent of all spectrum has been acquired;
- 70 percent of the back office control systems are ready for operation;
- 71 percent of 26,136 employees have been trained in PTC;
- 66 percent of the 1,297 radio towers that will need to be erected have been completed;
- 55 percent of the 4,047 locomotives and cab cars are PTC-installed; and
- 40 percent of the 2,826 route miles are in testing or demonstration, while awaiting FRA approval.

It is also important to note that progress on hardware installation on locomotives and cab cars, as well as wayside towers is only shown when completed. This means if an operator has installed 80 percent of the necessary hardware on 10 locomotives, that progress would not be reflected in quarterly reports.

Since mandating PTC installation in 2008, the federal government has provided \$272 million in PTC grants to commuter railroads, \$197 million of which was only awarded at the end of May 2017. An additional \$30 million was awarded by FRA to MeteorComm, a private rail communications company, to help research and develop the new technology.

Two commuter rail operators have also secured federal loans to help pay for installation, one for \$220 million and the second for \$967.1 million. While this financing has been helpful, the burden of repaying these loans still falls on public agencies that are already under financial pressure.

To date, cost of full implementation of PTC is estimated to be approximately \$4 billion, which does not take into account future operating and maintenance costs currently estimated to range from \$80 million to \$130 million annually. For publicly-funded agencies that rely on federal, state, and local funding, as well as passenger fares to operate their service, this number is staggering.

These costs are in addition to the existing \$90 billion backlog needed to bring the current public transportation system into a State of Good Repair (SGR), as estimated by the U.S. Department of Transportation. A June 2013 survey of our commuter railroad agencies found that many commuter railroads have state of good repair needs that far outweigh their capital budgets, even

before including the additional costs associated with implementing PTC. Capital investments such as replacing bridges (some of which are more than 100 years old), rehabilitating outdated locomotives, and upgrading tracks, safety systems, and signal and communication systems were deferred to fund PTC.

We request that Congress and the administration consider these costs and provide additional funding so that publicly-funded commuter railroads can implement and operate PTC, as well as tend to the massive backlog of system safety upgrades. Additional funding would not only help commuter railroads continue to hit necessary milestones, but it would also allow them to address critical and costly interoperability challenges and system-wide reliability improvements after PTC deployment.

While funding has been an issue for many commuter railroads, there are other challenges to PTC implementation. The installation and commissioning of PTC requires highly qualified signaling engineers. With so many agencies implementing PTC at the same time, available expertise in the field has been scarce. Similar to the limited number of signaling engineers, the demand on manufacturing and test facilities to produce the equipment has also been a significant challenge for the industry. Accessing and acquiring spectrum has also proven to be a major hurdle in the implementation process. Overall, the lack of experts and resources in relevant fields has limited the ability to expedite implementation at each stage of the process.

Additionally, each commuter rail agency continues to serve its customers throughout the installation of PTC. This creates a delicate balance between access to tracks and locomotives for installation, and reductions in service to riders. Similarly, PTC must have the ability to interface and function with neighboring systems and other operators that share a section of track. This is particularly difficult in metropolitan areas where several different carriers operate on one section of track. Interoperability requirements continue to evolve and will require our industry to work on common issues to facilitate faster progress.

Looking forward, many railroads are reaching a crucial step for PTC implementation known as Revenue Service Demonstration (RSD) and it would be beneficial for the railroads to understand common success criteria to achieve and receive approval from FRA. Issues may arise when tenant railroads are granted extensions and allowed by FRA to continue operating, but are perceived as a business risk to the host railroads who may not allow them to continue running service. The passenger rail industry continues to work with suppliers to obtain parts, but closer cooperation is required to achieve implementation by the deadline.

Finally, the public transportation industry is also concerned that FRA may not have adequate highly-skilled staff to respond to the magnitude of documentation that is required for PTC approval, especially as we approach the end of 2018. APTA urges Congress to ensure FRA has the resources and technical staff to facilitate PTC implementation.

APTA and PTC

APTA has been engaged in the issue of PTC since the initial release of the Rail Safety Act. These efforts include:

- Participating in conjunction with the member railroads in the Rail Safety Advisory Committee meetings, providing coordinated comments on the draft provisions leading to the publication of the final rule.
- Taking an active role with our members in the deliberations of AAR's Interoperable Train Control (ITC) committee to draft the ultimate requirements for PTC as deployed by the freight railroads, now held by AAR as industry standards.
- Providing testimony at NTSB public hearings on PTC technology.
- Working diligently on behalf of the industry in pursuit of 220 MHz radio spectrum including numerous meetings with FCC and the commissioning of a major industry study documenting the overall requirement.
- Supporting the development of hosted back office service technology in conjunction with the FRA and the supply community. This service provides I-ETMS-deploying railroads with a cost-effective alternative to having their own back office.

APTA then worked with AAR and the American Short Line and Regional Railroad Association (ASLRRA) to bring together all appropriate parties and experts to share information and to help expedite PTC implementation. APTA also organized a PTC symposium where representatives of freight railroads provided their extensive expertise in PTC implementation. Commuter railroads that share tracks with freight railroads need planning to be incorporated into the interoperability testing schedule of freight railroads. These PTC symposia, which were attended by passenger rail CEOs and chief engineers, senior leadership of FRA, representatives from APTA, AAR and ASLRRA, included presentations from passenger and freight railroads that had progressed far enough to provide insights based on their installation experiences. As part of APTA's Annual Meeting in October 2017 in Atlanta, GA, our Commuter Rail CEOs Committee heard a detailed presentation by a passenger railroad that had implemented PTC. Among the issues discussed were ongoing testing challenges, timelines for submittals, approvals by FRA, and interoperability requirements.

These symposia and leadership meetings led to the establishment of "user groups," starting in 2013, to share information and encourage coordinated actions. User group meetings have been held in various parts of the country including Denver, CO; St Louis, MO; Chicago, IL; Philadelphia, PA; Denton, TX; Washington, DC; Salt Lake City, UT; and West Palm Beach, FL. Attendees included representatives from the FRA, commuter and passenger railroads that are implementing I-ETMS and E-ATC, as well as technical and engineering professionals, suppliers, and consultants. ACSES implementers have their own user group organized by Amtrak.

The user group meetings focus on software release issues, lessons learned during implementation and testing, and best practices for submittals. Work is underway to establish common formats for critical submittals and actions. These common formats are anticipated to facilitate a faster review process by FRA.

Additionally, APTA hosted an industry PTC Summit that included CEOs and senior engineering staff from all commuter railroads, FRA senior leadership, and representatives from Congress who reinforced the importance of PTC implementation. Our association is compiling and expanding information on PTC implementation status provided to FRA on a quarterly basis. This information is provided to PTC user groups and has been used to inform Congress, NTSB and other stakeholders.

APTA will continue to facilitate the user groups by establishing collaboration sites on the APTA web site and by scheduling regular communications. We will continue to collect and expand information on the status of implementation by our members. APTA is also continuing to participate on the Train Control Communications and Operations Committee composed of FRA, AAR, ASLRRA, and the Transportation Technology Center, Inc. (TTCI) to investigate the prospects of next generation PTC and associated supporting technologies.

APTA has consistently included PTC implementation as a key topic at our major meetings and will continue to do so at upcoming conferences, including our Annual Legislative Conference this March in Washington, DC. Programming will include congressional staff panels, regulatory agency presentations, and committee meetings.

Conclusion

On behalf of APTA, I want to reiterate the public transportation industry's long standing and continued commitment to install PTC. As a former transit CEO in Pittsburgh and Orlando, I know first-hand how passionate public transportation leaders are about the safety of our riders, employees and communities. We joined this industry to make a difference in the lives of millions of people by providing access to opportunities. We don't just move people; we connect people to what they need, love, and aspire to achieve – and we do it safely and reliably.

APTA is grateful for the work this committee has done to enhance safety on our nation's railroads. We look forward to continuing to work with you and your staff on this and many other common issues that face public transportation agencies.

**MR. PAUL SKOUTELAS, PRESIDENT AND CEO, AMERICAN PUBLIC
TRANSPORTATION ASSOCIATION**

**“Oversight of Positive Train Control Implementation in the United States”
Thursday, February 15, 2018, 10:00 a.m.
2167 Rayburn House Office Building
Washington, D.C.**

Questions for the Record

Submitted on behalf of Ranking Member Peter DeFazio (OR-04)

- 1. Mr. Reyes said at the hearing, “There have not been many of the commuter railroads that have stated that money is really the issue.” Yet in your written and oral testimony, you requested Congress provide more funding to help commuter railroads implement Positive Train Control (PTC).**

– Please discuss the commuter railroads’ funding needs for PTC.

As stated in my testimony, the cost of full implementation of PTC is estimated to be approximately \$4 billion, which does not take into account future operating and maintenance costs, currently estimated to range from \$80 million to \$130 million annually. System upgrades as well as additional cybersecurity measures represent some of the future costs associated with effectively running PTC. For publicly-funded agencies that rely on federal, state, and local funding, as well as passenger fares to operate their service, this number is staggering.

These costs are in addition to the existing \$90 billion backlog, as estimated by the U.S. Department of Transportation, needed to bring the current public transportation system into a state of good repair. A June 2013 survey of our commuter railroad agencies found that many commuter railroads have state of good repair needs that far outweigh their capital budgets, even before including the additional costs associated with implementing PTC. Many commuter railroads have deferred capital investments such as replacing bridges (some of which are more than 100 years old), rehabilitating outdated locomotives, and upgrading tracks, safety systems, and signal and communication systems in order to fund PTC implementation. This past weekend at APTA’s annual Legislative Conference, I heard from many of our members that the lack of resources to tackle both PTC implementation and critical capital projects remains a major concern.

– How much federal funding would you recommend?

First, Congress needs to appropriate the full amounts for the Consolidated Rail Infrastructure and Safety Improvements (CRISI), Federal-State Partnership for State of Good Repair, and Restoration and Enhancement grant programs already authorized by the FAST Act and allow commuter railroads to compete for these resources. In particular, the CRISI and State of Good Repair grant programs could help commuter railroads implement PTC and address other top safety and capital projects that have had to be set aside in order to prioritize PTC.

Second, you recently recommended an additional \$2.6 billion in grants for commuter railroads to implement PTC. This was based on a previous APTA estimate that it would take commuter railroads \$3.6 billion to complete implementation. We now project that it will cost the industry nearly \$4 billion; so using similar methodology we request \$3 billion in grants for PTC. Recognizing the amount of resources commuter railroads have already allocated into the effort, as well as future PTC-related costs, we would urge Congress to make the use of these resources flexible, while still requiring they are used by commuter railroads implementing and operating PTC to ensure the safety of their passengers.

Submitted on behalf of Congressman Daniel Lipinski (IL-03)

1. **Do you think changes to the *Railroad Rehabilitation and Improvement Financing (RRIF)* program would make it a more attractive tool for your members, or are commuter railroads unable or unwilling to take on additional debt? If so, what specific changes to RRIF would you recommend?**

Taking on additional debt does inhibit some commuter railroads from participating in the RRIF program. However, additional debt is not a prohibitive condition for all commuter railroads, if other improvements were made. Two top priorities would be providing funding to subsidize credit risk premiums and allowing RRIF loans to count as a state or local match when the repayment method, or primary revenue pledge, is from a non-federal source. APTA is also interested in seeing the continuation of the FAST Act provision that allows RRIF loans for transit oriented development. That provision is due to sunset after 2019.

2. **Other than funding, what additional resources do your members need from the federal government to make progress toward meeting the PTC deadline?**

The public transportation industry remains concerned and urges Congress to ensure FRA has the resources and technical staff to facilitate PTC implementation. House and Senate Transportation, Housing and Urban Development, and Related Agencies Appropriations Subcommittee leadership wrote to DOT Secretary Elaine Chao on February 8, 2018 about this very issue:

The Consolidated Appropriations Act of 2017 provided \$218 million for FRA Safety and Operations, \$5 million more than the requested level, specifically to fund the necessary staff for safety and PTC implementation. A PTC Deputy Staff Director and positions for other technical specialists within the PTC organization remain vacant. In addition, regional and headquarters safety staff remain below targeted hiring numbers. These vacancies persist even though the FRA has more than \$10 million available to fill them. The PTC deadline was extended by Congress more than two years ago, giving FRA ample time to hire the staff necessary to oversee the development and deployment of PTC nationwide. The Administration's hiring freeze last year certainly did not help the situation. However, even now - nine months after the hiring freeze was lifted - there are no active postings to fill these staffing vacancies.

It should be noted that the GAO report published on March 1, 2018 (Report No. GAO-18-367T) also noted similar concerns, “With the year-end 2018 deadline approaching, and an anticipated significant increase in FRA’s workload, targeting resources to the greatest risk can help better ensure that FRA effectively fulfills its oversight responsibilities and provides commuter railroads the information they need to prepare for the 2018 deadline or seek an extension.” We agree with GAO’s two recommendations and urge FRA to proactively work with the commuter railroad agencies to help facilitate interoperability and define all paths and requirements necessary to receive extensions as authorized by Congress. We are also encouraged by FRA’s willingness to work with commuter railroads to streamline submission processes and hope progress will continue to be made on that front.

Submitted on behalf of Congressman Rick Larsen (WA-02)

1. **There are at least 10 commuter railroads which seemingly will not meet the basic criteria outlined in the *Fixing America’s Surface Transportation Act* (P.L. 114-94) to qualify for a PTC implementation extensions to 2020. What are they doing to meet those standards?**

It is APTA’s sincere hope that all commuter railroads will either meet the 2018 deadline, or meet the necessary milestones for an extension from FRA. Each of APTA’s members is working with FRA to meet the criteria required to implement PTC. The commuter railroads are also working with their suppliers to obtain the components and subsystems as quickly as possible, and with their system integrators to integrate the subsystems in a timely manner.

2. **Do you have concerns about the ability of the Federal Rail Administration to oversee PTC implementation and certify rail safety plans in a timely manner?**

As noted in my testimony, FRA has been responsive to inquiries and provided guidance when requested. We request a more proactive approach in providing guidance to the commuter rail industry including defining what is adequate to satisfy requirements for equipment installation on the numerous locomotives and cab cars.

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Administration's hiring freeze last year certainly did not help the situation. However, even now - nine months after the hiring freeze was lifted – there are no active postings to fill these staffing vacancies.

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3. Which commuter railroads will have fully implemented PTC by December 31, 2018, and which commuter railroads will likely apply for an extension?

We believe PTC is a critical component of rail safety and our commuter railroads are working diligently to implement the technology as quickly and safely as possible. We remain hopeful that all of our members will continue to make significant progress and do everything they can to meet necessary milestones. We are laser-focused on continuing to support them in their efforts to implement PTC, and are working with FRA and AAR to do so. I detailed many of our activities in my written testimony, which include:

- Facilitating a PTC summit with FRA and congressional staff, representatives from all commuter railroads (even those who are not members), and freight railroads.
- Ongoing, regular technical user groups meetings for each type of PTC technology.
- PTC-specific programming at past and future APTA conferences and meetings.



**Testimony of John P. Tolman
Vice President and
National Legislative Representative
Brotherhood of Locomotive Engineers
and Trainmen**

**Before the House Subcommittee on Railroads,
Pipelines, and Hazardous Materials.
Hearing entitled:**

**“Oversight of Positive Train Control
Implementation in the United States.”**

February 15, 2018

Good morning, Chairman Denham and Ranking Member Capuano, and Members of the Committee. My name is John Tolman and I am the Vice President and National Legislative Representative of the Brotherhood of Locomotive Engineers and Trainmen, which is a Division of the Teamsters Rail Conference. On behalf of nearly 37,000 active BLET members, I want to express my thanks for the opportunity to provide the Committee with our position regarding the oversight of Positive Train Control (“PTC”) in the United States.

I’d like to begin by expressing my relief that the Amtrak Crew and the Chairman and Congressional Colleagues and Staff were not seriously injured in the train accident on January 31, 2018. A number of Congressmen and Women were shaken up by the event, but luckily no one on the train was seriously injured or perished. Our condolences go out to the family of the sanitation worker who was killed on the truck and the injured co-worker, and to the locomotive engineer of that train, who will carry the memory of this accident with him for the rest of his life.

Accidents like this — where trains hit motor vehicles — happen on an average of three times per day and I know the lawmakers on the Amtrak train that day learned firsthand about the horrific nature of any train accident. Train crews must endure these kinds of collisions on a far too regular basis, and the accident in which some of you were involved underscores the need for implementing the best and safest technology available as quickly and as efficiently as possible.

Positive Train Control has been a regular feature in the national headlines over the past many years since it was mandated in the 2008 Rail Safety Improvement Act. The BLET has long advocated for the implementation of PTC in the United States on Freight and Passenger railroads as a way to prevent the worst types of accidents that endanger our members and the public.

In 2015 the NTSB noted that PTC could have prevented 145 rail accidents that have killed 288 people and injured 6,574 since 1969, when the agency first recommended the technology. Official damages have totaled hundreds of millions of dollars, not counting the economic burdens borne by victims’ families. These numbers do not include the recent accident outside of Tacoma, Washington that claimed 3 lives and injured 70 people, or the Cayce, South Carolina collision that killed 2 — including a BLET member — and injured 116 people. While NTSB is still investigating these tragedies, they have stated publicly that PTC may have prevented both of these accidents, as

well. In fact, NTSB says that 40 to 60 accidents each year could be prevented by PTC. (May 22, 2002).

We have testified before this Committee numerous times, and we have also delivered testimony to the Federal Railroad Administration and the NTSB. We do not need to convince anyone about the need for PTC. The need for it has been recognized and enshrined in the law by Congress.

The Rail Safety Improvement Act of 2008 mandated that PTC be implemented by December 31, 2015. Some railroads have dragged their feet since the mandate and persuaded Congress to go along with the dithering and — with the deadline looming in the face of threats to cripple the economy and strand passengers — Congress granted an eleventh hour extension. The Railroad Safety and Positive Train Control Extension Act was passed in 2015 granting an extension to 2018, and beyond to 2020 in some circumstances.

We warned Congress in 2015 that their actions would result in people dying from collisions that PTC could prevent. Congress was convinced by the railroad industry that more time was needed. Here we are years later and PTC is not fully implemented. Safety has waited too long and lives have been lost during the last extension. I could read all the names of the people who have died in PTC-preventable accidents from December 2015 until now to illustrate a point that we are talking about ... real people who had their lives taken from them due to the failure of one of the most profitable industries in America to implement PTC technology. Now that we are in the second deadline year, it is becoming clear that some Carriers consider their extension to be until 2020, and there is limited accountability to prevent that.

Congress played a part in the extension in a non-recorded voice vote attached to the highway extension bill. One Senator even expressed that if he had to have taken a recorded vote, he would have voted differently.

Regulatory efforts to enforce the railroads have been equally anemic. The railroads have carved out so many exceptions to the regulation for PTC as to greatly neuter the law's effectiveness. Congress cannot allow the good regulatory work done in the Rail Safety Advisory Committee to be lost among the industry's insatiable thirst for "regulatory reform." Safety does not need reforming. It has been said that rail safety regulations "are written in blood." They come about, sad to say, after the accident and after the deaths and after the smoke clears.

Our task in the railroad industry is to see that PTC is implemented and deployed by the deadline. This does not mean we should move forward in a reckless way. How PTC is implemented will be critical to gaining the safety benefits it is designed to provide. Training will be vital and train crews will have to work as an integral team to make the systems work and perform safely.

New systems will be installed along the right of way and in the cab of locomotives. Human factor issues will require close attention to be paid to human-machine interface problems as more screens with more buttons and submenus come online to interface with PTC.

While PTC is an attempt to solve some of the most pressing safety problems in the railroad industry, it is not a perfect solution. We strongly desire it to be implemented with deliberate speed. We also recognize the challenges PTC will place on train crews who will be forced to interact with more computer screens in the locomotive cab. This will only increase the potential for electronic device distraction, given the already widespread use of technologies such as Trip Optimizer and LEADER.

This could also exacerbate the widespread problem of fatigue in the railroad industry. This problem has been wrestled with for decades and Congress made an attempt to alleviate it in the RSIA in 2008. However, the regulator's effort in meeting the requirements of the Act has not produced any measurable results a full decade after Congress mandated that the management sit down with labor and work out genuine fatigue mitigation plans.

The length of trains is another urgent issue. Freight trains have been getting longer and heavier in recent years. Some of these trains have been over three miles long. This creates technical challenges with maintaining brake pipe pressure that aids a train in slowing and stopping. There are currently no federal regulations or laws that address train length. This needs to change. These trains also have the potential of blocking many public crossings simultaneously.

There are some bright spots when it comes to rail safety. We applaud Transportation and Infrastructure Ranking Member Congressman Peter DeFazio and Congressman Capuano for introducing H.R. 4766, the "Positive Train Control Implementation and Financing Act of 2018." We would especially like to point out that it prevents further foot-dragging for implementation.

It is time to get past decades of the industry's "can't do" excuses, and it is time for ALL of Congress to get on board the safety train. I know some of the railroads have worked in earnest to get this done by the mandate of 2015 and we applaud these railroads. Some of the railroads have valid excuses as to why they needed and extension, but it is time to make the country safer and redouble our efforts to get this done.

One recent comment from a CEO complaining of PTC delaying its trains and in the next breath saying safety is his railroad's number one priority just boggles my mind. Now we all know there will be problems during the implementation and troubleshooting but in the long run we all will be safer ... no one seriously disputes that fact.

They say "Teamwork makes the dream work." On the railroad, train crews consisting of Engineers and Conductors form a solid team that moves trains across the United States safely every day. We applaud Congressman and former Chairman of the T&I Committee Don Young for introducing the Safe Freight Act H.R. 233, which currently has 83 co-sponsors in the House. In the Senate, Senator Heidi Heitkamp has introduced a companion bill — S. 2360 — and we expect it will too receive bipartisan support. True safety requires two crew members on every freight train, and such a goal should have no party lines.

In December, FRA reported to Congress regarding PTC Implementation that eight of the 37 railroads required to implement PTC systems on their own tracks have obtained conditional PTC System Certification from FRA. In total, 41 railroads are subject to the statutory PTC implementation mandate and must implement FRA-certified PTC systems by the December 31, 2018 deadline mandated by Congress, unless a railroad obtains a limited deadline extension. We strongly urge you to take all appropriate measures to ensure the current PTC deadline is met.

I thank the Chairman and Ranking Member and Committee and I would be happy to try to answer any questions you may have.

QUESTIONS FOR THE RECORD
 THE HONORABLE PETER DEFazio
 SUBCOMMITTEE ON RAILROADS, PIPELINES, AND HAZARDOUS MATERIALS
 HEARING ON
 “OVERSIGHT OF POSITIVE TRAIN CONTROL IMPLEMENTATION IN THE UNITED STATES”
 FEBRUARY 15, 2018

Mr. John P. Tolman, Vice President and National Legislative Representative, Brotherhood of Locomotive Engineers and Trainmen

1. There was a discussion in the press following the DuPont, Washington, accident at the end of December regarding the lack of adequate training for engineers and conductors. What gaps exist in training (in overall train operations, not just Positive Train Control (PTC)) for engineers and conductors?

Response: Shortcomings in training for locomotive engineers and conductors fall into three general categories. One is that there is virtually no recurrent training provided to re-familiarize crews with the physical characteristics (e.g., locations of stations, signals and switches, curvatures and grades, and permanent and temporary speed restrictions) of territories over which they work only sporadically. This is becoming a more serious problem every year, as railroads strive to consolidate freight pools operating in different directions into a single, multi-directional pool that may consist of 1,500 miles of track or more. Typically, what little recurrent training that is made available requires crewmembers to make familiarization trips on their own time and without pay, which discourages engineers and conductors from actually engaging in that training.

The other category is railroad usage of computer technology in ways that are counterproductive to or actually hinder safety. Railroads are increasingly replacing classroom-style reviews and testing on operating rules and practices with computer-based testing (“CBT”), for which the engineer or conductor self-prepares. In the traditional classroom setting there is both instruction and discussion of key rules and procedures; the resultant give-and-take provides every participant a shared knowledge base beyond that which he or she brought to the class. CBT, on the other hand, is a sterile process designed to encourage only studying to the test, which provides far less understanding and offers no input from an instructor or a fellow student. Similarly, railroads use locomotive simulators as a disciplinary or certification revocation tool for engineers, in stark contrast to the aviation industry’s use of flight simulators for purposes of training and learning/practicing responses to emergent hazardous operating scenarios.

Hazardous Materials and Nuclear Transport Training have long been a problem that has been talked about within the Rail Safety Advisory Committee. Rail labor has presented training proposals within the committee but the committee has not adopted. Representatives from the industry have said they believe their training is adequate. In 2005, the accident at Graniteville, South Carolina resulted in a hazardous materials release of chlorine gas overcame Engineer Chris Seeling and exposed the small town to the gas and forced a two-week evacuation. Better training and emergency escape breathing apparatus (“EEBA”) mandated by Congress in the Rail Safety Improvement Act of 2008. The act encompassed the training needs for hazardous materials and the need to provide crews with a chance to escape toxic inhalation hazards that occur in a derailment and release of hazardous materials. Both training and equipping crews with EEBA has been respectively lacking and non-existent.

2. The Association of American Railroads stated that dark territory will be covered by PTC and automatic switch position indicators. According to the Federal Railroad Administration, PTC will be implemented on about 54,000 route miles in the United States in accordance with federal requirements. However, there will still be areas on the rail network where PTC will not be installed. Some of these areas – without PTC – will be non-signaled, or dark territory. What safety measures are in place to ensure safety in these non-PTC, non-signaled areas? What additional safety measures should be put in place?

Response: It is our understanding that no federal law currently requires — and no railroad plans to voluntarily undertake — a program to install automatic switch position indicators in dark territory on routes where PTC installation will not be required. We believe the legislation enacted by Congress should enforce the requirement for automatic switch position indicators in dark territory on all routes where the maximum authorized speed exceeds restricted speed. The Rail Safety Advisory Committee Safety Technology In Dark Territory Working Group was established on September 23, 2010 by a task statement to tackle the requirements in the RSIA. The BLET requested that the Working Group be provided with a list of criteria that the railroad carriers were using to install switch point monitors and indicators currently before the law took effect.

This was requested because the rail carriers stated that they did use switch indicators in certain locations. This was the genesis of requesting the criteria because if the rail carriers saw fit to put a switch point indicator in a given location, they certainly had some criteria internally to base their decision on its installation. If they had existing criteria that would help the group arrive at a criteria that would be feasible to adhere to in a newly promulgated regulation. The Working Group has been dormant for several years. For more on the RSIA requirement, the RSAC Task Statement and information regarding “Development of a Switch Point Monitoring System in Non-Signaled Territory,” please see the attachments.

QUESTIONS FOR THE RECORD
 THE HONORABLE RICK LARSEN
 SUBCOMMITTEE ON RAILROADS, PIPELINES, AND HAZARDOUS MATERIALS
 HEARING ON
 “OVERSIGHT OF POSITIVE TRAIN CONTROL IMPLEMENTATION IN THE UNITED STATES”
 FEBRUARY 15, 2018

Mr. John P. Tolman, Vice President and National Legislative Representative, Brotherhood of Locomotive Engineers and Trainmen

1. Human error is the number one cause of all rail accidents. Additionally, fatigue is considered an underlying factor. What is being done or should be done, or what challenges exist, to address fatigue in the railroad industry?

Response: While many of the most publicized railroad accidents in the past couple of years involved human error as a primary causal factor, in 2017 some 37.46% of non-grade-crossing railroad accidents/incidents reported to the Federal Railroad Administration (“FRA”) involved human factors as the primary cause, while 41.83% of such accidents involved equipment or track defects as the primary cause. *See*

<http://safetydata.fra.dot.gov/OfficeofSafety/publicsite/Query/AccidentByRegionStateCounty.aspx>

. Moreover, during the 10-year period from January 1, 2008 through December 31, 2017, human factors were the primary cause 37.27% of the time, while track and equipment defects were the primary cause of 44.96% of reported accidents/incidents. *See*

<http://safetydata.fra.dot.gov/OfficeofSafety/publicsite/Query/TenYearAccidentIncidentOverview.aspx>. Indeed, three of the more recent derailments involving crude oil spills, explosions, fires and evacuations — December 2013 in Casselton, North Dakota, February 2015 in Mount Carbon, West Virginia, and May 2015 in Heimdal, North Dakota — were caused by track failures.

We agree that fatigue has been identified as the single most frequent contributor to human error-caused railroad accidents. It also is the most preventable contributor. The Rail Safety Improvement Act of 2008 mandated that railroads establish Fatigue Management Plans (“FMPs”), which are required to address “Scheduling practices for employees, including innovative scheduling practices, on-duty call practices, work and rest cycles, increased consecutive days off for employees, changes in shift patterns, appropriate scheduling practices for varying types of work, and other aspects of employee scheduling that would reduce employee fatigue and cumulative sleep loss.” 122 STAT. 4856, codified at 49 U.S.C. § 20156(f)(3)(D). These strategies can be summed up as maximizing work “predictability.” The pending FRA rulemaking that will govern FMPs should require railroads to address fatigue in a holistic and comprehensive manner, with a focus on predictability. Railroad workers also should have the absolute right to mark off from work when fatigued without being subject to discipline as a result of railroad attendance policies.



**Committee on Transportation and Infrastructure
U.S. House of Representatives**

Will Shuster
Chairman

Washington, DC 20515

Peter A. DeFazio
Ranking Member

Mathew M. Sturges, Staff Director

February 12, 2018

Katherine W. Dedrick, Democratic Staff Director

DEMOCRATIC SUMMARY OF SUBJECT MATTER

TO: Democratic Members, Subcommittee on Railroads, Pipelines,
and Hazardous Materials
FROM: Democratic Staff, Subcommittee on Railroads, Pipelines,
and Hazardous Materials
RE: Subcommittee Hearing on “Oversight of Positive Train Control
Implementation in the United States”

PURPOSE

The Subcommittee on Railroads, Pipelines, and Hazardous Materials will meet on Thursday, February 15, 2018, at 10:00 a.m., in 2167 Rayburn House Office Building, to hold a hearing on “Oversight of Positive Train Control Implementation in the United States”.

BACKGROUND

The Rail Safety Improvement Act of 2008 (RSIA) (P.L. 110-432), which was signed by President George W. Bush on October 16, 2008, required each Class I railroad¹ and each entity providing intercity or commuter rail passenger transportation to implement a positive train control (PTC) system by December 31, 2015, governing operations only on: (1) main lines over which intercity rail passenger transportation or commuter rail passenger transportation is regularly provided; (2) main lines over which poison- or toxic-by-inhalation hazardous materials are transported; and (3) such other tracks as the Secretary of Transportation may prescribe by regulation or order. RSIA required that the PTC system be designed to prevent: (1) train-to-train collisions; (2) over-speed derailments; (3) incursions into established work zones; and (4) the movement of a train through a switch left in the wrong position.

The legislation originated in the Committee on Transportation and Infrastructure in 2007 following a series of deadly train accidents which the National Transportation Safety Board (NTSB) determined were PTC-preventable. These included a 2002 Metrolink accident in Placentia,

¹ BNSF, CSX, Kansas City Southern, Norfolk Southern, Union Pacific, Canadian National, and Canadian Pacific.

California,² a 2004 Union Pacific/BNSF chlorine accident in Macdona, Texas,³ a 2005 Norfolk Southern chlorine accident in Graniteville, South Carolina,⁴ a 2005 Union Pacific accident in Shepherd, Texas,⁵ and a 2005 Metra accident in Chicago, Illinois.⁶

The NTSB first recommended that railroads install PTC nearly 50 years ago, following its investigation of the August 20, 1969, head-on collision of two Penn Central commuter trains near Darien, Connecticut, in which four people were killed and 45 others were injured. Over the past five decades, the NTSB has investigated 153 accidents that would have been prevented had PTC been implemented, and these accidents have killed more than 300 people and injured about 6,800 others. PTC has remained on the NTSB's Most Wanted List of Transportation Safety Improvements since the list's inception in 1990.⁷

Despite the NTSB's investigations of one PTC-preventable railroad accident after another, and its repeated recommendations to the FRA to require implementation of PTC, the FRA took little action.

On May 1, 2007, Committee on Transportation and Infrastructure Democrats introduced H.R. 2095, the Federal Railroad Safety Improvement Act of 2007, which mandated implementation of PTC. The Senate passed a companion bill on August 1, 2008. Final passage occurred following a September 12, 2008, Metrolink accident in Chatworth, California, which killed 25 people and injuring 102 others. According to the NTSB, the accident was PTC-preventable.

PTC Extension

In August 2013 and September 2015, the Government Accountability Office (GAO) expressed concerns that most railroads would not complete PTC implementation by the 2015 deadline due to a number of complex and interrelated challenges.⁸ The GAO noted that some PTC components were still in development; additional time was needed for field testing; the FRA was short-staffed; and commuter railroads faced challenging funding issues. The GAO recommended that FRA develop a plan that outlines how the agency will hold railroads accountable for making continued progress toward the full implementation of PTC by, among other things, collecting any additional information needed to track progress of individual railroads.⁹

Not surprisingly, the Committee received numerous letters from railroads, shippers, and States asking Congress to extend the PTC deadline. Some in Congress suggested a full five-year extension to December 31, 2020, which House Democrats rejected.

Ultimately, the deadline was extended in the Surface Transportation Extension Act of 2015 (2015 Act) (P.L. 114-73) to December 31, 2018. The Secretary was authorized to provide each

² See <https://www.nts.gov/investigations/AccidentReports/Reports/RAR0304.pdf>

³ See <https://www.nts.gov/investigations/AccidentReports/Reports/RAR0603.pdf>

⁴ See <https://www.nts.gov/investigations/AccidentReports/Reports/RAR0504.pdf>

⁵ See <https://www.nts.gov/investigations/AccidentReports/Reports/RAB0601.pdf>

⁶ See <https://www.nts.gov/investigations/AccidentReports/Reports/RAB0607.pdf>

⁷ See <https://www.nts.gov/safety/mwl/Documents/2017-18/2017MWL-FctSht-CollisionAvoidance-R.pdf>

⁸ Government Accountability Office, *Positive Train Control: Additional Authorities Could Benefit Implementation*, August 2013.

⁹ Government Accountability Office, *Positive Train Control: Additional Oversight Needed As Most Railroads Do Not Expect to Meet 2015 Implementation Deadline*, September 2015.

railroad on a case-by-case basis with an additional extension of up to 24 months as long as the railroad (1) installed all PTC system hardware; (2) acquired all spectrum; (3) completed all employee training; (4) in the case of a Class I railroad carrier or Amtrak, implemented PTC or initiated revenue service demonstration on 50 percent of its territories; and (5) in the case of a commuter railroad, initiated revenue service demonstration on at least one territory.

Several high-profile accidents have renewed congressional concerns about the status of PTC implementation:

- On December 1, 2013, a Metro-North commuter train in the Bronx, New York, derailed traveling at 82 miles per hour (mph) into a 30 mph speed limited curve.¹⁰ Four passengers died and 61 others were injured. The NTSB determined the accident was PTC-preventable.
- On May 12, 2015, an Amtrak train derailed at a curve in Philadelphia, Pennsylvania, killing eight passengers.¹¹ More than 180 others were transported to area hospitals. The train was traveling at 106 mph into a 50 mph curve. The NTSB found “that the most likely reason the engineer failed to slow for the curve was he believed he was beyond the curve where the authorized speed was 110 mph. He lost his situational awareness because his attention was diverted to an emergency situation with a nearby Southeastern Pennsylvania Transportation Authority train that had made an emergency stop after being struck by a projectile.” The NTSB determined the accident was PTC-preventable.
- On December 18, 2017, an Amtrak train operating from Seattle, Washington, to Portland, Oregon, derailed near DuPont, Washington, killing 3 passengers and injuring 62 passengers and crewmembers.¹² In addition, 8 individuals in highway vehicles were also injured. The train was traveling at about 80 mph into a 30-mph curve. When the train derailed, it was on its first regular passenger service trip on a single main track. The NTSB determined the accident was PTC-preventable.
- On February 4, 2018, an Amtrak train traveling from New York City to Miami, Florida, encountered an improperly lined switch near Cayce, South Carolina, which diverted the train from the main line to a siding, where it struck a CSX freight train. Two crewmembers were killed, and 116 others were injured. The accident scenario is similar to the 2005 accidents in Graniteville, South Carolina, and Shepherd, Texas, both of which involved misaligned switches and no operational signals.¹³ The NTSB determined the Cayce accident was PTC-preventable.

¹⁰ See <https://www.ntsb.gov/investigations/AccidentReports/Reports/RAB1412.pdf>

¹¹ See <https://www.ntsb.gov/investigations/AccidentReports/Reports/RAR1602.pdf>

¹² See <https://www.ntsb.gov/investigations/AccidentReports/Pages/RRD18MR001-prelim.aspx>

¹³ In the 2008 Act, Congress required the Secretary to prescribe standards, guidance, regulations, or orders governing the development, use, and implementation of rail safety technology in dark territory, such as switch position monitoring devices or indicators. Dark territories are areas along the rail network where there are no signal systems or where signals have been suspended from operation. The FRA has taken no action to implement the mandate.

Implementation Status

Following passage of the 2015 Act, the railroads filed revised plans with the FRA to implement PTC. According to those plans, only seven railroads would not meet the December 31, 2018, deadline: Trinity Rail Express in Texas (2019), Canadian National (2020), Central Florida Rail Corridor (2020), CSX (2020), Massachusetts Bay Transportation Authority (MBTA) (2020), Norfolk Southern (2020), and Metra in Illinois (2020).

Since that time, it has become increasingly clear that only a few railroads will actually meet the 2018 deadline. These include BNSF, Union Pacific, and some commuter railroads. All others report that they will request extensions from FRA sometime this fall, which the Secretary must review and approve in accordance with the 2015 Act.

According to a chart posted on the FRA's website, several railroads may not even meet the criteria for an extension.¹⁴ These include Long Island Rail Road, MBTA, Northern Indiana Commuter Transportation District, Central Florida Rail Corridor, Consolidated Rail Corporation (Conrail), Maryland Area Regional Commuter "MARC" trains, New Mexico Rail Runner Express, New Jersey Transit, Altamont Corridor Express, South Florida Regional Transportation, Capital Metropolitan Transportation Authority (TX), Nashville Regional Transportation Authority, and Trinity Railway Express.

It is difficult, however, for Congress and the public to track railroads' progress toward PTC implementation. Although the 2015 Act requires railroads to submit annual reports to FRA on their progress and they are published on DOT's website, the annual reports are largely redacted. The 2005 law allows the FRA to exclude proprietary and security-sensitive information from the publicly available reports. In many cases, however, the FRA has blacked-out the entire report from public viewing. It is unclear why the FRA believes that the number of locomotives equipped or employees trained, for example, are proprietary or security-sensitive. A new annual report is due to FRA on March 31, 2018. It would be beneficial for Congress and the public to be able to compare that report with the annual report filed in 2016.

The FRA also requires the railroads to submit quarterly reports on their progress. The detail provided in those reports are useful, but the information is not timely. Currently, the FRA is showing the railroads' progress through September 30, 2017. They have not updated the website with the fourth quarter reports through December 31, 2017. We understand that FRA staff is still reviewing the railroad filings.

In preparation for the hearing, Committee Democratic staff met or spoke with each of the Class I railroads about their December 31, 2017 reports and received updated information on their progress toward implementation. Class I railroads report that, as of December 31, 2017, 83 percent of locomotives have been equipped, 72 percent of track segments have been completed, 97 percent of radio towers have been installed, 88 percent of employees have been trained, and 56 percent of their route miles are in PTC operation. Additionally, the FRA has conditionally certified all but two Class I railroad PTC safety plans; Canadian National and Kansas City Southern are awaiting approval.

¹⁴ See <https://www.fra.dot.gov/app/ptcprogress>

Amtrak has equipped 76 percent of their locomotives with PTC; completed 67 percent of their track segments; installed 85 percent of its radio towers, and trained 89.5 percent of their employees. They are in PTC operation on 67 percent of Amtrak-owned route miles.¹⁵

Democratic staff attempted to reach many of the commuter railroads on their progress toward PTC implementation but only received a few responses. The chart on the FRA website is outdated, and the FRA was unable to provide Democratic staff with updated information. The American Public Transportation Association maintains that the commuter railroads have equipped 55 percent of locomotives and cab cars with PTC hardware; installed 66 percent of radio towers; trained 71 percent of employees; and acquired 89 percent of the spectrum needed. In addition, 40 percent of their route miles are either in testing or demonstration mode, but are not operational as they are awaiting FRA safety approval.

The FRA is required in the 2015 Act to issue a report to Congress on July 1, 2018, on the progress of each railroad in implementing PTC.

Funding

The FRA claims to have provided \$2 billion to railroads for implementation of PTC, but most of that is in the form of loans through the Railroad Rehabilitation and Improvement Financing (RRIF) and the Transportation Infrastructure Financing and Innovation Act (TIFIA) loan programs. In 2015, the Metropolitan Transportation Authority in New York received a RRIF loan of \$967.1 million to implement PTC on the Long Island Rail Road and Metro North Railroad.¹⁶ MBTA recently received a \$220 million RRIF loan and \$167 million TIFIA loan to help implement PTC.

However, grants for PTC are much lower; only about \$400 million was provided for PTC implementation through the American Recovery and Reinvestment Act of 2009 (ARRA). Another \$50 million¹⁷ was provided in fiscal year (FY) 2010, \$11 million¹⁸ in FY2015, and \$25 million¹⁹ in FY2016 through the Railroad Safety Technology Grant Program.

The Fixing America's Surface Transportation Act (FAST Act) (P.L. 114-94) provided \$199 million from the Mass Transit Account of the Highway Trust Fund to assist States, local governments, and transit agencies with implementing PTC. This was funding the House Democrats insisted on in order to support an extension of PTC to 2018. The FRA awarded the grants on May 31, 2017:

- \$21.68 million for the Peninsula Corridor Joint Powers Board (CA);
- \$3.2 million for the Southern California Regional Rail Authority;
- \$1.84 million for the Florida Department of Transportation;
- \$31.63 million for the South Florida Regional Transportation Authority;
- \$18.87 million for the Illinois Department of Transportation;

¹⁵ Detailed information on whether PTC is operational on track not owned by Amtrak but where Amtrak operates is not available or provided by Amtrak in reports to FRA. Those reports are submitted by the host railroads.

¹⁶ See <https://www.transportation.gov/briefing-room/federal-railroad-administration-issues-9671-million-mta-loan-finance-critical-safety>

¹⁷ See <https://www.fra.dot.gov/eLib/Details/L00994>

¹⁸ See <https://www.fra.dot.gov/eLib/Details/L16318>

¹⁹ See <https://www.fra.dot.gov/eLib/Details/L18324>

- \$20.2 million for Metra (IL);
- \$7.82 million for MBTA;
- \$9.44 million for Maryland Transit Administration/MARC;
- \$12.02 for the Missouri Department of Transportation;
- \$10 million for the New Jersey Transit Corporation;
- \$3.6 million for the Rio Metro Regional Transit District;
- \$33.75 million for the New York State Department of Transportation;
- \$1.2 million for the Oregon Department of Transportation;
- \$2.7 million for the Tri-County Metropolitan Transportation District of Oregon;
- \$5.8 million for the Southeastern Pennsylvania Transportation Authority;
- \$9.67 million for the Capital Metropolitan Transportation Authority (Texas); and,
- \$3.52 million for the Utah Transit Authority.

Additional funding for commuter railroads is needed. Loans are helpful in the short-term, but they must eventually be paid back by the borrower. In August 2013, the GAO reported that commuter railroads face challenges in funding PTC implementation due to the overall lack of Federal funding available to make investments in commuter rail and limited sources of revenue.

On January 11, 2018, Committee Ranking Member DeFazio and Subcommittee on Railroads, Pipelines, and Hazardous Materials Ranking Member Capuano introduced H.R. 4766, the Positive Train Control Implementation and Financing Act, which provides \$2.6 billion in grants to intercity passenger and commuter railroads to help implement PTC. The bill also eliminates the two-year extension for PTC, prohibits service on any new passenger route unless PTC is fully installed and operational on the route, and improves reporting by Amtrak.

WITNESSES

Mr. Richard Anderson
President and Chief Executive Officer
Amtrak

The Honorable Ed Hamberger
President and Chief Executive Officer
Association of American Railroads

Mr. Juan D. Reyes, III
Acting Deputy Administrator
Federal Railroad Administration

Mr. Paul P. Skoutelas
President and Chief Executive Officer
American Public Transportation Association

The Honorable Robert Sumwalt
Chairman
National Transportation Safety Board

Mr. John Tolman
Vice President and National Legislative Representative
Brotherhood of Locomotive Engineers and Trainmen

Congress of the United States
Washington, DC 20515

January 18, 2018

The Honorable Heath Hall
 Acting Administrator
 Federal Railroad Administration
 U.S. Department of Transportation
 1200 New Jersey Avenue SE
 Washington, DC 20590

Dear Acting Administrator Hall,

The recent derailment of the Amtrak *Cascades* train 501 near DuPont, Washington, on December 18, 2017 is a stark reminder of the significant investments needed to improve the safety and efficiency of our nation's rail system. Although the National Transportation Safety Board (NTSB) investigation is ongoing, their preliminary report indicates that Positive Train Control (PTC) would have prevented this derailment.¹ In the aftermath of this tragic incident, it is clear that achieving nationwide implementation of PTC must be a top priority for the Federal Railroad Administration (FRA). Recognizing that the current statutory deadline for PTC implementation is December 31, 2018, we write to request a comprehensive update on the status of PTC implementation and the steps FRA will take to ensure that all passenger and freight railroads meet this deadline.

Since 1969, the NTSB has investigated 148 accidents that were determined to be preventable by PTC. These accidents resulted in 298 fatalities and 6,763 injuries. Based on the NTSB's recommendations, Congress passed the Rail Safety Improvement Act of 2008 (P.L. 110-432), which mandated implementation of PTC on all commuter and intercity passenger rail lines and Class I freight main lines transporting poison- or toxic-by-inhalation hazardous materials by December 31, 2015. However, in 2015 the Government Accountability Office (GAO) issued a report to Congress that found most railroads would not meet the 2015 deadline due to a variety of challenges including access to funding and difficulty integrating technologies. The report also stated that FRA's oversight efforts were "not sufficient to oversee progress made by individual railroads and to hold them accountable for making progress in meeting the mandated PTC deadline".²

Following the release of the GAO report, Congress passed the Surface Transportation Extension Act of 2015 (P.L. 114-73) which authorized a three year extension of the implementation deadline and mandated additional oversight by FRA, including the authority to assess civil penalties, to ensure that railroads make adequate progress toward full PTC implementation. With less than one year until the 2018 implementation deadline, it is imperative that FRA conduct vigorous oversight of the data provided by railroads and use all tools within FRA's authority to ensure that all railroads complete full PTC implementation by the deadline. It is also essential that FRA make available additional funding to implement this technology.

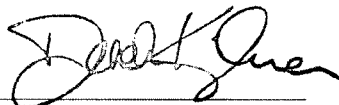
¹ NTSB. PRELIMINARY REPORT Amtrak Passenger Train 501 Derailment DuPont, Washington December 18, 2017 [RRD18MR001](#) (Washington, D.C.: January 4, 2018)

² GAO, Positive Train Control: Additional Oversight Needed As Most Railroads Do Not Expect to Meet 2015 Implementation Deadline, [GAO-15-739](#) (Washington, D.C.: September, 2015).

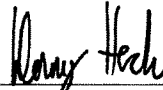
Therefore, we respectfully request that you provide a comprehensive update on the current status of PTC implementation, an outline of the actions FRA will take over the next several months to ensure that full PTC implementation is achieved by December 31, 2018, and an estimate of the total funding necessary to meet this deadline.

Thank you for your attention to this important matter. We look forward to your response.

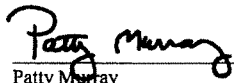
Sincerely,



Derek Kilmer
Member of Congress



Denny Heck
Member of Congress



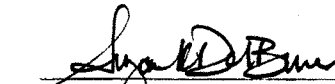
Patty Murray
United States Senator



Maria Cantwell
United State Senator



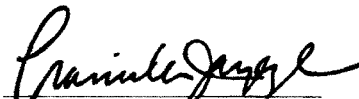
Adam Smith
Member of Congress



Suzan DeBene
Member of Congress



Rick Larsen
Member of Congress



Pramila Jayapal
Member of Congress

Congress of the United States
Washington, DC 20515

January 10, 2018

The Honorable Elaine L. Chao
 U.S. Department of Transportation
 1200 New Jersey Avenue, SE
 Washington, DC 20590

Dear Secretary Chao:


In the wake of the tragic Amtrak derailment in Washington, we write to you regarding the Department of Transportation's legal responsibility to ensure steps are taken to prevent these types of tragedies in the future. Specifically, we seek answers from the Department of Transportation as to the status of passenger railroad speed limit action plans required by the Fixing America's Surface Transportation (FAST) Act of 2015.

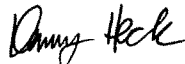
As you know, the Passenger Train Derailment Prevention Act of 2015 was included as Section 11406 of the FAST Act. This important provision required each railroad carrier providing intercity rail passenger transportation or commuter rail passenger transportation to survey its entire system and identify each curve, bridge, or tunnel requiring a reduction of more than 20 miles per hour from the approach speed and submit an action plan detailing steps the railroad will take to enhance safety at those locations. Those steps could include modification of existing ATC or other signal systems, increases in crew size, installation of signage at those locations, installation of alerters in cabs, and increases in crew communication. The plan must contain milestones and target dates for implementing those steps.


While the root causes of this most recent derailment are still being investigated, it is clear that this accident involved a train travelling at high speed entering into a high-hazard curve. Compliance with Section 11406 was intended to reduce the likelihood of these tragic events and, as such, we seek answers from the Department of Transportation as to the status of these action plans. Specifically, we would like to know if Amtrak has submitted any speed limit action plans to the DOT for review and approval, as required by law, and whether DOT reviewed and approved such plans. We also request copies of the plans.


Thank you for your attention to this letter, and we look forward to your prompt response.

Sincerely,


 Sean Patrick Maloney
 Member of Congress



 Denny Heck
 Member of Congress


 Peter DeFazio
 Member of Congress

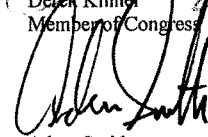

 Michael E. Capuano
 Member of Congress



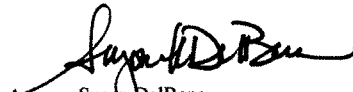
Rick Larsen
Member of Congress



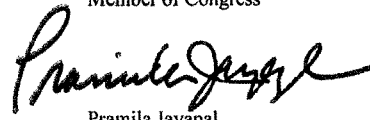
Derek Kilmer
Member of Congress



Adam Smith
Member of Congress



Suzan DelBene
Member of Congress



Pramila Jayapal
Member of Congress

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<https://www.wsj.com/articles/surveillance-cameras-made-by-china-are-hanging-all-over-the-u-s-1510513949>

Surveillance Cameras Made by China Are Hanging All Over the U.S.

Company 42%-owned by the Chinese government sold devices that monitor U.S. Army base, Memphis streets, sparking concerns about cybersecurity

By Dan Strumpf, Natasha Khan and Charles Rollet

Nov. 12, 2017 2:12 p.m. ET

The Memphis police use the surveillance cameras to scan the streets for crime. The U.S. Army uses them to monitor a base in Missouri. Consumer models hang in homes and businesses across the country. At one point, the cameras kept watch on the U.S. embassy in Kabul.

All the devices were manufactured by a single company, Hangzhou Hikvision Digital Technology. It is 42%-owned by the Chinese government.

Hikvision (pronounced “hike-vision”) was nurtured by Beijing to help keep watch on its 1.4 billion citizens, part of a vast expansion of its domestic-surveillance apparatus. In the process, the little-known company has become the world’s largest maker of surveillance cameras. It has sold equipment used to track French airports, an Irish port and sites in Brazil and Iran.

Hikvision’s rapid rise, its ties to the Chinese government and a cybersecurity lapse flagged by the Department of Homeland Security have fanned concerns among officials in the U.S. and Italy about the security of Hikvision’s devices.

 ELSEWHERE IN THE WSJ

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- Three UCLA Players Remain in China Amid Theft Probe
- This Sunday, Some Churchgoers May Choose to Pack Guns With Their Bibles
- Spain Sees Signs That Tide Is Turning in Catalonia

“The fact that it’s at a U.S. military installation and was in a very sensitive U.S. embassy is stunning,” says Carolyn Bartholomew,

chairwoman of the U.S.-China Economic and Security Review Commission, which was created by Congress to monitor the national-security implications of trade with China. “We shouldn’t presume that there are benign intentions in the use of information-gathering technology that is funded directly or indirectly by the Chinese government.”

Some security vendors in the U.S. refuse to carry Hikvision cameras or place restrictions on their purchase, concerned they could be used by Beijing to spy on Americans. The General Services Administration, which oversees \$66 billion of procurement for the U.S. government, has removed Hikvision from a list of automatically approved suppliers. In May, the Department of Homeland Security issued a cybersecurity warning saying some of Hikvision’s cameras contained a loophole making them easily exploitable by hackers. The department assigned its worst security rating to that vulnerability.

The concerns about Hikvision are reminiscent of the controversy surrounding Chinese technology giant Huawei Technologies Corp., whose telecom gear was effectively banned in the U.S. after a 2012 congressional report raised fears that its networking equipment could be used to spy on Americans. The company, founded by a former Chinese army engineer, has repeatedly dismissed such concerns.

Hikvision says its equipment is safe and secure, that it follows the law wherever it does business and that it worked with Homeland Security to patch the flaws the agency cited. It says it “cannot in any way access and control the content of the video cameras.” It says the vast majority of its products are sold through third-party vendors, meaning it often doesn’t even know where they wind up. It declined to comment on Ms. Bartholomew’s remarks.

“Hikvision is a business,” said Chief Executive Officer Hu Yangzhong, one of several Hikvision executives interviewed for this article. “It would be impossible for us to add a backdoor to our cameras, as that would damage our business.”

Vulnerabilities in surveillance cameras have become more of a concern as internet-

connected devices become more prevalent. Cameras can be a weak link in an organization's information-technology network, potentially opening "backdoors"—ways to gain access by bypassing security mechanisms—for hackers, including state-backed ones.

Last year, hackers took control of hundreds of thousands of cameras, including many made by a Chinese rival of Hikvision, to launch a huge "denial of service" attack that security experts said made sites run by Amazon.com Inc., PayPal Inc. and Twitter Inc. unavailable for hours.

Hikvision grew out of a government laboratory started a half-century ago to develop military and industrial technologies. Its largest shareholder is China Electronics Technology Group Corp., or CETC, a state-owned defense and military electronics manufacturer. Its biggest individual shareholder is Gong Hongjia, a Hong Kong billionaire and university classmate of top Hikvision executives. Some executives are Communist Party members also employed by subsidiaries of CETC, according to securities filings in China.

Mr. Gong said in an interview that he provided capital to help found Hikvision in 2001, in an arrangement that gave the government-backed lab a 51% stake. Although the size of that stake has since declined, the government only began to more actively aid the company in the past few years. "The government can't help you sell in overseas markets," Mr. Gong said. "That was all thanks to the years the company spent investing in expanding our presence."

CETC didn't respond to a request for comment.

Contracts from Chinese government agencies propelled the company's rise. It helped with security at the 2008 Beijing Olympics. In 2011, the company said the value of contracts for its "safe city" camera project in Chongqing, a large city in China's southwest, reached \$1.2 billion. Its cameras are now ubiquitous on the city's streets.

China's President Xi Jinping, who has made high-tech security a priority, visited the firm's headquarters in 2015. Since that year, Hikvision has received major loans from two of China's three policy banks, which finance state development goals.

Zheng Yibo, a Hikvision vice president, says CETC has no role in Hikvision's day-to-day operations. He declines to say how much revenue comes from the Chinese government, but says its "government-sales portion isn't high."

Hikvision's head of research, Pu Shiliang, holds a leadership position at a Hangzhou



Hikvision helped with security at the 2008 Olympic Games in Beijing. Contracts from Chinese government agencies propelled the company's rise. PHOTO: PAULA BRONSTEIN/GETTY IMAGES

laboratory run by the Ministry of Public Security, China's police force. The lab explores ways authorities can leverage data gathered by the company's cameras and other sources to improve policing, according to the lab's website.

Chinese authorities are encouraging new surveillance projects in China to feature artificial-intelligence capabilities, Mr. Pu told an audience in Beijing in September. Scores of high-tech companies have emerged to address the government's call for more innovative surveillance techniques.

China has been rolling out new technologies to monitor its people in ways that would unsettle many in the U.S. and the West. Unfettered by privacy concerns or public debate, Beijing's authoritarian leaders have introduced facial-recognition technology and other surveillance measures in a vast experiment in social engineering. Their goal is to influence behavior and identify lawbreakers.

At Hikvision's Hangzhou showroom, walls are lined with monitors and video cameras that employ artificial intelligence to recognize objects and sounds from afar and to produce visible images despite pollution or darkness. Hikvision's "Darkfighter" thermal camera enables it to record under ultralow light conditions, the company says. Its "Blazer Pro" server, it says, allows license-plate recognition. It says its dome-shaped "bullet" cameras are explosion-proof, and it offers camera-equipped drones and cameras programmed to alert authorities to large gatherings.

The company's consumer camera line, called "EZVIZ," can sync with a smartphone app. One softball-sized device can detect noises—a dog barking loudly or the sound of a door opening—and automatically direct its lens at the source of the disturbance, sending an alert to the phone.

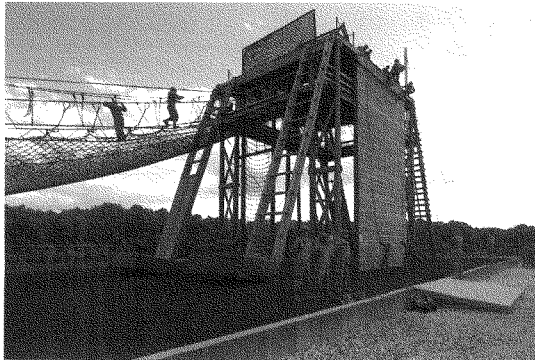
Global sales of surveillance equipment has increased 55% in the five years through

2016, according to consulting firm IHS-Markit. By pricing cameras below those made by Western competitors, Hikvision has become the top seller of surveillance equipment in Europe and No. 2 in the U.S., according to IHS-Markit and other industry analysts. Its cameras frequently are sold without the Hikvision name and are rebranded by U.S. distributors—a frequent practice in the industry.

This year, Hikvision opened research-and-development offices in Silicon Valley and Montreal. It plans to employ 350 people in North America by year's end and 800 by 2022, the company says.

Its shares have risen sharply since its initial public offering on Shenzhen's stock exchange in 2010, and they have more than doubled this year, giving the company a valuation of \$56 billion, close to that of Sony Corp.

Fort Leonard Wood, an Army base in Missouri's Ozarks, uses Hikvision cameras in its security system, according to the Chinese company and NexGen Integration, a U.S. company that handled the installations. The base offers basic combat training and includes a school for chemical, biological and nuclear-defense drills.



Fort Leonard Wood, a U.S. Army base in Missouri's Ozarks, uses Hikvision cameras in its security system. PHOTO: ORLIN WAGNER/ASSOCIATED PRESS

To win the contract with the Army, Hikvision says, it had to show its cameras could stream at 30 frames per second, providing sufficiently fast motion detection. It custom-built some of the technology to accommodate the base's limited internet bandwidth.

Chris Nickelson, NexGen's owner, says none of his customers have raised any issues about Hikvision gear. The army base referred questions to the U.S. Army's installation management command public affairs office, which said it doesn't discuss equipment or

capabilities, but added that “any equipment or software that goes on a military network is thoroughly tested for security vulnerabilities.”

At the U.S. Embassy in Kabul, Afghanistan, Hikvision cameras were installed “to monitor nonsensitive electrical closets for theft prevention,” says a State Department spokesperson, referring to closets housing electronics equipment.

Last year, the security-industry trade publication IPVM published a procurement order for several dozen Hikvision cameras, revealing their presence in the Kabul embassy. The government canceled the order in September 2016 and removed the Hikvision cameras already in the embassy.

A State Department official says that was because security officials at the department, who are supposed to be notified of new security-related installations, weren’t given a heads up about the purchase. The department wouldn’t comment on whether security concerns were a factor in the removal of the existing cameras.

In a written statement, Hikvision said it had no knowledge of the Kabul project’s particulars “on the end-user level,” and that “accepting or removing particular products is always at the discretion of the end-user.”



Surveillance equipment and other gear is on display at Hikvision's office in Hangzhou. PHOTO: XINHUA/ZUMA PRESS

Shortly thereafter, the General Services Administration removed Hikvision from a list of automatically approved suppliers, companies that make their products in countries that have certain trade agreements with the U.S. The agency says it nixed the firm after it was alerted the products were manufactured and assembled in China, which isn’t on the list. U.S. government agencies that want to buy Hikvision gear can’t go through the

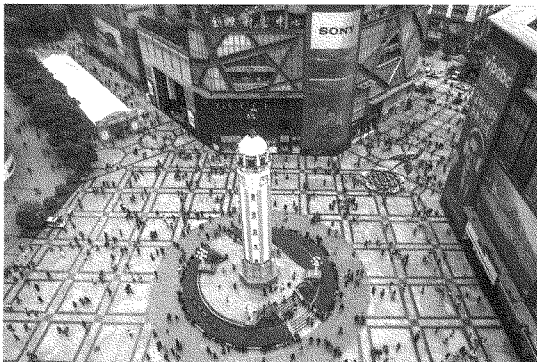
GSA system, but have to take extra steps such as showing the items are fairly priced.

Hikvision says its gear was listed on the GSA by two resellers, which it says it hadn't authorized. Hikvision says it asked the resellers to remove the products from the GSA list.

In January, Italy's government awarded a \$49 million contract to a supplier in a deal that included the installation of Hikvision cameras at some state buildings. The deal was publicly questioned in June by Italian legislator Arianna Spessotto, who said the cameras "could pose a risk to national public security" and asked how the government planned to verify the cameras' safety.

A spokesman for Italy's government procurement agency said the supplier "guaranteed a level of security appropriate to the risk," but that "no one can be absolutely sure that a participating firm has not surreptitiously inserted backdoor devices and security vulnerabilities for malicious purposes."

Hikvision says the Italian legislator's concerns about security risk are "totally unfounded and absurd."



Hikvision cameras are ubiquitous on the streets of Chongqing, a large city in China's southwest. PHOTO: PRISMA BILDAGENTUR/UIG/GETTY IMAGES

Nathan Brubaker, an analyst at U.S. cybersecurity firm FireEye Inc., says the software vulnerabilities identified by the Department of Homeland Security could make those Hikvision cameras prone to a hacking attack similar to the "Mirai" denial-of-service attack on the internet last year.

"Camera security is often poor" across the industry, says Marco Herbst, chief executive

of Dublin-based Evercam, which develops camera software. “You’re dealing with a device that in many cases is sloppily installed with default passwords that are publicly available on the internet.”

Security experts say backdoors that allow outsiders to bypass security protections are often difficult to identify. Such vulnerabilities can be accidental—the result of flaws in the software’s original design or in updates.

The Hikvision flaws identified by the Department of Homeland Security affected more than 200 camera models and potentially tens of millions of shipped devices, estimates John Honovich, editor of IPVIM. They made it possible for outsiders to hack into internet-connected Hikvision cameras in just a few steps, according to Mr. Honovich and FireEye, the cybersecurity firm. Hikvision acknowledged the flaws affected some cameras, but dismisses Mr. Honovich’s assertions as “unfounded insinuations and hearsay.”

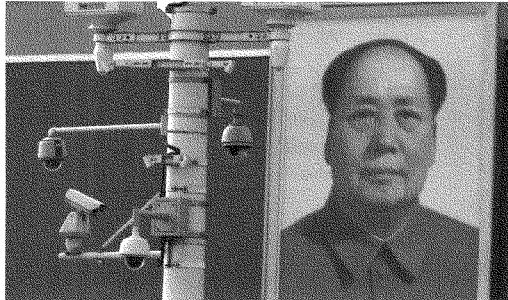
Hikvision says it cooperated with the DHS to fix the problem and directed customers to a software fix. “This issue did not cause a noticeable impact on Hikvision’s overseas business,” a company spokeswoman says.

Genetec, a Canadian security company with a U.S. presence, requires customers who want to buy Hikvision cameras to sign a waiver disclaiming Genetec of liability in the event of a security breach. Pierre Racz, the Montreal-based company’s chief executive officer, says concern over cameras made by “companies owned or controlled by the Chinese government” and “Beijing’s reputation for aggressive cyberespionage” led him to require the waiver.

Hikvision says “linking Hikvision with espionage is simply outrageous and completely unfounded.”

Hikvision has been selling cameras to the Memphis police department since 2007. Lieutenant Joseph Patty II, who manages the system, says cameras became more essential after the police department lost 500 officers—about one-quarter of the force—because of budget cuts three years ago. Officers can observe streets from a central command center. Some devices use advanced lighting technology to produce clear images even in the middle of the night.

“We probably make up to 100 arrests every year” because of the cameras, including for car theft, robbery and murder, says Lt. Patty. The cameras have been used to monitor Black Lives Matter protests and recent demonstrations surrounding Memphis’



Surveillance cameras hung near Tiananmen Gate in Beijing in 2013. PHOTO: NG HAN GUAN/ASSOCIATED PRESS

Confederate monuments, he says.

He says the city started using the cameras long before concerns about hacking came into play. The department uses a decentralized network where cameras aren't connected to the police mainframe computer, he says.

"At the end of the day, they are the No. 1 camera manufacturer in the world," says Lt. Patty. "They make a lot of cameras and many people use them, even if they don't say Hikvision on the product."

—Liza Lin and Wenxin Fan contributed to this article.

Write to Dan Strumpf at daniel.strumpf@wsj.com

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Congress of the United States
Washington, DC 20515

January 30, 2018

The Honorable Bill Shuster
Chairman
Committee on Transportation and
Infrastructure
2268 Rayburn House Office Building
Washington, D.C. 20515

The Honorable Peter DeFazio
Ranking Member
Committee on Transportation and
Infrastructure
2134 Rayburn House Office Building
Washington, D.C. 20515

The Honorable Jeff Denham
Chairman
Subcommittee on Railroads, Pipelines,
and Hazardous Materials
2029 Rayburn House Office Building
Washington, D.C. 20515

The Honorable Michael E. Capuano
Ranking Member
Subcommittee on Railroads, Pipelines,
and Hazardous Materials
2134 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Shuster, Ranking Member DeFazio, Chairman Denham, and
Ranking Member Capuano,

As you are aware, on December 18, 2017, the westbound Amtrak Train 501 carrying 77 passengers and five crewmembers derailed at milepost 19.8 on the Lakewood subdivision near DuPont, Washington. This tragic incident, which resulted in three fatalities and 62 injuries, has reignited an important discussion about rail safety and the measures that Congress and the Federal Railroad Administration (FRA) should implement to better protect passengers and communities, including Positive Train Control (PTC).

The National Transportation Safety Board (NTSB) has initiated an investigation and recently issued its preliminary report on the circumstances surrounding the accident. According to this report, the train was traveling 78 mph at the time of the derailment, 48 mph above the posted speed limit for that section of the track. Based on these findings, the NTSB has determined that PTC would have prevented this derailment.

While the NTSB investigation continues, we believe that the Transportation and Infrastructure Committee has a critical oversight role to play in this matter. As you know, the congressionally mandated deadline for full PTC implementation is December 31, 2018. We believe it is critical that Congress exercise adequate oversight over the FRA and the railroad operators to ensure that this life saving technology is implemented on or before this deadline.

To that end, we respectfully request that you convene an oversight hearing to evaluate the current status of PTC implementation nationwide and to ensure that the FRA and railroad operators are on

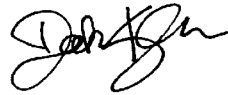
schedule to meet the 2018 deadline.

Thank you for your attention to this significant public safety issue.

Sincerely,

A handwritten signature in black ink that reads "Denny Heck". The signature is written in a cursive, slightly slanted style.

Denny Heck
Member of Congress

A handwritten signature in black ink that reads "Derek Kilmer". The signature is written in a cursive, slightly slanted style.

Derek Kilmer
Member of Congress



**Committee on Transportation and Infrastructure
U.S. House of Representatives**

Bill Shuster
Chairman

Washington, DC 20515

Peter A. DeFazio
Ranking Member

Mathew M. Stargos, Staff Director

December 28, 2017

Katherine W. Dedrick, Democratic Staff Director

The Honorable Elaine Chao
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Chao:

On December 18, Amtrak Cascades Train 501, operating from Seattle to Portland, derailed south of Tacoma, killing three people and injuring numerous others. According to the National Transportation Safety Board (NTSB), the lead investigator of the accident, the train was traveling approximately 80 miles per hour into a 30 mile-per-hour curve.

The circumstances surrounding this accident are eerily similar to the tragic 2015 derailment of an Amtrak Northeast Regional train in Philadelphia, Pennsylvania, killing eight people and injuring more than 200 others, 11 critically. Within days of the accident, the NTSB announced that it would not have occurred had Positive Train Control (PTC) been operational on the line. While we do not yet know whether the Tacoma accident was PTC-preventable, it once again demonstrates the need for implementing PTC now.

Since 1969, the NTSB has investigated 151 accidents that would not have occurred had PTC been installed. These accidents resulted in 298 fatalities and 6,763 injuries (see attached). PTC has been on the NTSB's Most Wanted List of safety improvements since its inception in 1990.

We believe it is high time that the railroads implement PTC. It has been nearly a decade since passage of the Rail Safety Improvement Act of 2008 (P.L. 110-432) which required freight, commuter, and intercity passenger railroads to implement PTC by December 31, 2015. That deadline was later extended to December 31, 2018. We understand that PTC is complex but there is no excuse for it taking this long and for some railroads to be lagging so far behind, as indicated in the progress reports submitted to the Federal Railroad Administration.

According to your website, only seven railroads will not meet the 2018 deadline: Trinity Rail Express in Texas (2019), Canadian National (2020), Central Florida Rail Corridor (2020), CSX (2020), Massachusetts Bay Transportation Authority (2020), Norfolk Southern (2020), and Metra in

The Honorable Elaine L. Chao
 December 28, 2017
 Page 2


Illinois (2020)¹. We find that hard to believe given the lack of progress by a host of other railroads in equipping locomotives, completing track segments, installing radio towers, training employees, acquiring spectrum, installing back office servers, and submitting safety plans for FRA's review and approval.² For example, Long Island Railroad, Northern Indiana Commuter Transportation District, Consolidated Rail Corporation, Maryland Area Regional Commuter "MARC" trains, New Mexico Rail Runner Express, New Jersey Transit, Altamont Corridor Express, South Florida Regional Transportation (Tri-Rail), Capital Metropolitan Transportation Authority, and Nashville Regional Transportation Authority are among a host of railroads that are significantly behind, but have projected a 2018 final implementation date in FRA-submitted reports.

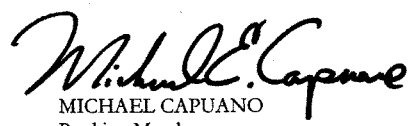
Although the law allows you to extend the deadline for up to 24 months if the railroads meet certain criteria that we insisted upon, Congress always intended this extension to be used in limited circumstances. Yet a new graphic on your website seems to suggest that the Department of Transportation is tracking railroad efforts to meet the 2020 extension rather than holding them accountable for meeting the 2018 deadline.

Given the confusing and seemingly out-of-date information on your website, we request a detailed status update on where the railroads are in fully implementing PTC and when they will finally meet the mandate. We also request a briefing from you and your staff on this issue in the early part of January.

In addition, we strongly urge you to include robust funding in any infrastructure or other package the Administration sends to the Hill to help the commuter and intercity passenger railroads implement PTC. In 2016, the American Public Transportation Association estimated that PTC implementation would cost the commuter rail industry more than \$3.5 billion, yet only \$25 million was requested in the President's FY2018 Budget for a rail safety and infrastructure program that we created in the Fixing America's Surface Transportation Act, which includes PTC as an eligible project. Congress has also only appropriated \$285 million for PTC, although we have long fought for more funding. We urge you to provide additional funding to help meet their needs. In the interim, we plan to introduce legislation in early January to address the significant funding gap and push the railroads to implement PTC.

Sincerely,


 PETER DeFAZIO
 Ranking Member
 Committee on Transportation and
 Infrastructure


 MICHAEL CAPUANO
 Ranking Member
 Subcommittee on Railroads, Pipelines, and
 Hazardous Materials

¹ <https://www.fra.dot.gov/Page/P0628>

² <https://www.fra.dot.gov/app/ptc/>

Chair, **David Kutrosky**, Capitol Corridor JPA
 Vice Chair, **Eric Curtit**, Missouri DOT
 Treasurer, **Venetia Keefe**, Indiana DOT
 Secretary, **Karen Songhurst**, Vermont AOT
 Former Officer, **Patricia Quinn**, NNEPRA
 At Large Member, **Amanda Martin**, Iowa DOT

States for
 www.s4prc.org



Via Email

February 27, 2018

Representative Bill Shuster, Chairman
 Committee on Transportation and Infrastructure
 U.S. House of Representatives
 2251 Rayburn House Office Building
 Washington, DC 20515

Representative Peter A. DeFazio, Ranking Member
 Committee on Transportation and Infrastructure
 U.S. House of Representatives
 2251 Rayburn House Office Building
 Washington, DC 20515

Dear Chairman Shuster and Ranking Member DeFazio:

The States for Passenger Rail Coalition, Inc. (SPRC) is an advocacy group made up of 24 State departments of transportation and passenger rail authority leaders from across the United States who work together to support the development and growth of passenger rail service for America.

Our members sponsor a combined 27 intercity passenger rail routes serving 296 communities across America. Last year our trains carried almost 15 million passengers, representing 48% of Amtrak's total ridership, the largest source of ridership among the three Amtrak business lines. We also contributed nearly \$800 million in revenues to Amtrak, through a combination of approximately \$550 million in passenger revenues plus \$250 million in contract payments.

As intercity passenger rail service sponsors, SPRC members are steadfastly committed to safety, service quality, and reliability. Safety is critical to the success of the nation's passenger and freight rail network. The protection and security of the passengers, employees, host railroads, and the communities are our collective top priority.

On behalf of all SPRC members, I would like to thank you for your leadership and ongoing support and, for your commitment to improving the safety, reliability, and performance of the nation's passenger and freight rail network.

Most importantly, given the background of the unfortunate and tragic incidents involving passenger trains recently and over the past few years, I write to express SPRC's request for the continued support of increased federal funding levels for the nation's passenger and freight railroads' equipment acquisition, installation, implementation and activation of Positive Train Control (PTC) as required by the Positive Train Control Enforcement and Implementation Act of 2015. Further, achieving the mandated deadline will require both flexibility and regulatory management that can only be achieved by direct involvement of senior management.

Passenger rail is a critical component of our nation's transportation network. Each day, millions of passengers travel on our system of intercity passenger rail, long distance trains, and commuter rail. Also, our nation's freight rail system is without equal in the world. The safe, reliable and cost-effective movement of passengers and goods by rail is vital to supporting both the nation's robust economy and our personal quality of life. The implementation of PTC across the national rail network acts to ensure the safety of all involved.

As you progress the work of the committee, our members are most willing to meet with you and/or your staff to relay our experiences and our concerns. Further, our members would be more than happy to offer testimony to the committee to share those experiences, report on the efforts we have made to improve our routes and service and express a sense of urgency to provide the necessary increased funding to successfully and expeditiously implement PTC across the nation's rail network.

Again, thank you for your interest and support.

Sincerely,

David B. Kutrosky
 Managing Director, Capitol Corridor Joint Powers Authority
 Chair, States for Passenger Rail Coalition, Inc.

California

Connecticut

Illinois

Indiana

Iowa

Louisiana

Massachusetts

Maine

Michigan

Minnesota

Missouri

Nevada

New York

North Carolina

Oklahoma

Oregon

Pennsylvania

Vermont

Virginia

Washington

Wisconsin

Capitol Corridor

Joint Powers

Authority

Northern

New England

Passenger

Rail Authority

LOSSAN

Joint Powers

Authority

San Joaquin

Joint Powers

Authority